YAMAHA

XVS1100AWR(C)
XVS1100ATR(C)

SUPPLEMENTARY SERVICE MANUAL

LIT-11616-16-46

5KS-28197-E1

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the XVS1100A. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

XVS1100L/XVS1100LC SERVICE MANUAL: LIT-11616-12-63 (5EL-28197-E0)
XVS1100AM/XVS1100AMC SUPPLEMENTARY SERVICE MANUAL:
LIT-11616-13-36 (5KS-28197-E0)

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XVS1100AWR(C)
XVS1100ATR(C)
SUPPLEMENTARY
SERVICE MANUAL
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NOTICE

This manual was produced by the Yamaha Motor Company, Ltd. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha Vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the vehicle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his vehicle and to conform with federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.

NOTE:

Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.

⚠ The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander or a person inspecting or repairing the motorcycle.

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

NOTE: A NOTE provides key information to make procedures easier or clearer.

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HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

This manual consists of chapters for the main categories of subjects. (See “Illustrated symbols”)

1st title ①: This is the title of the chapter with its symbol in the upper right corner of each page.

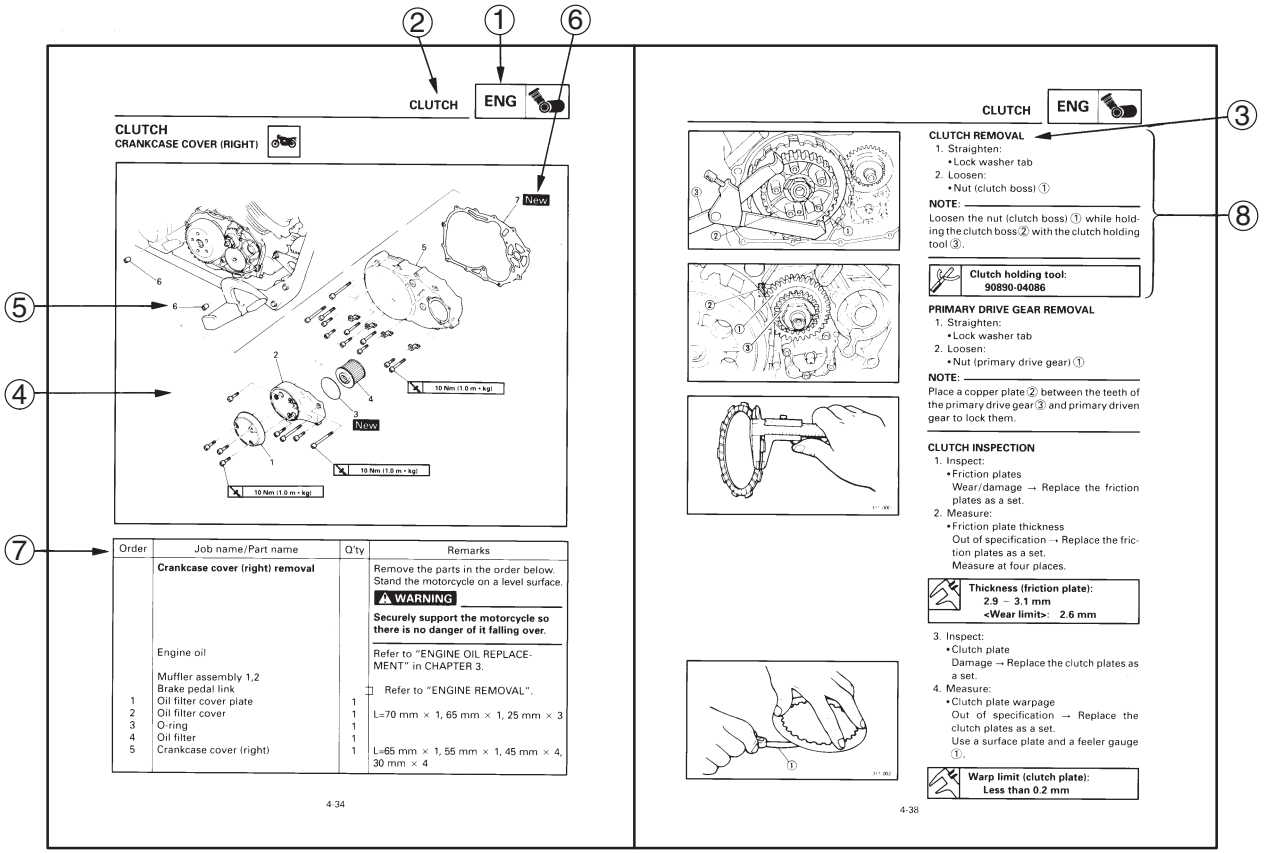
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper right corner of the page.

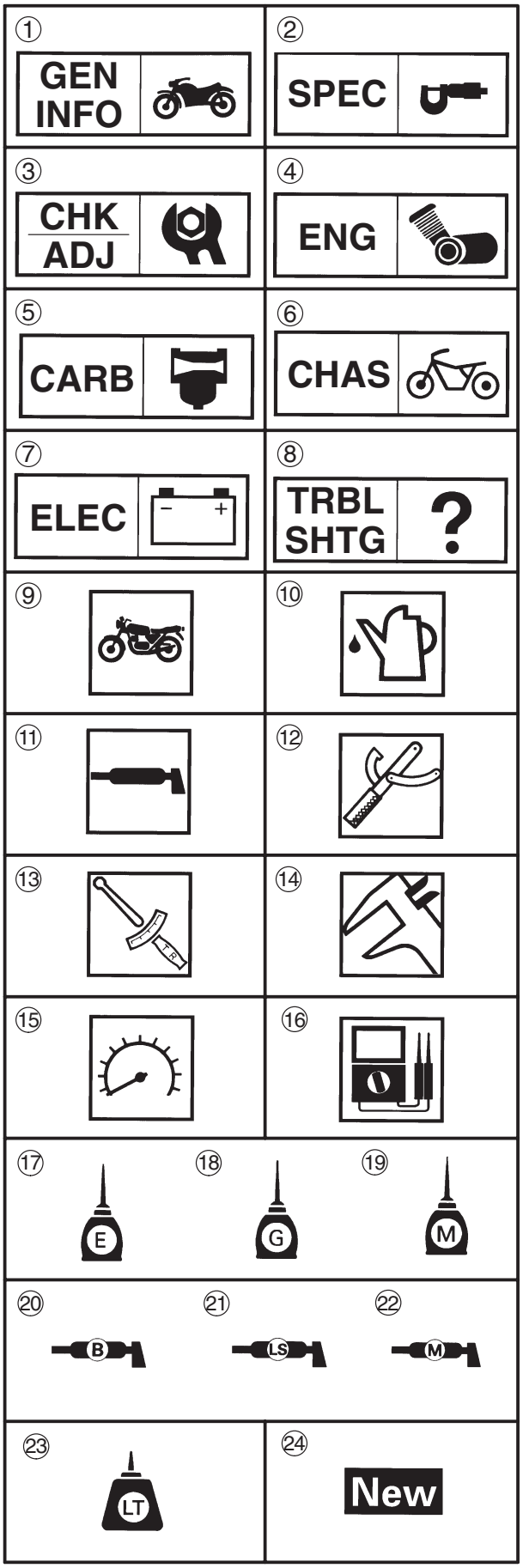
3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

EXPLODED DIAGRAMS

To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

1. An easy-to-see exploded diagram ④ is provided for removal and disassembly jobs.
2. Numbers ⑤ are given in the order of the jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks ⑥. The meanings of the symbol marks are given on the next page.
4. A job instruction chart ⑦ accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
5. For jobs requiring more information, the step-by-step format supplements ⑧ are given in addition to the exploded diagram and the job instruction chart.


②
①
⑥
CLUTCH
ENG
CLUTCH
CRANKCASE COVER (RIGHT)
7 New
5
6
6
2
4
3 New
10 Nm (1.0 m • kg)
10 Nm (1.0 m • kg)
10 Nm (1.0 m • kg)
⑤
④
⑦
Order | Job name/Part name | Q'ty | Remarks
Crankcase cover (right) removal
Remove the parts in the order below. Stand the motorcycle on a level surface.
WARNING
Securely support the motorcycle so there is no danger of it falling over.
Engine oil
Refer to “ENGINE OIL REPLACEMENT” in CHAPTER 3.
Muffler assembly 1,2
Brake pedal link
Refer to “ENGINE REMOVAL”.
1 Oil filter cover plate 1
2 Oil filter cover 1 L=70 mm × 1, 65 mm × 1, 25 mm × 3
3 O-ring 1
4 Oil filter 1
5 Crankcase cover (right) 1 L=65 mm × 1, 55 mm × 1, 45 mm × 4, 30 mm × 4
4-34
CLUTCH
ENG
③
⑧
CLUTCH REMOVAL
1. Straighten:
• Lock washer tab
2. Loosen:
• Nut (clutch boss) ①
NOTE:
Loosen the nut (clutch boss) ① while holding the clutch boss ② with the clutch holding tool ③.
Clutch holding tool: 90890-04086
PRIMARY DRIVE GEAR REMOVAL
1. Straighten:
• Lock washer tab
2. Loosen:
• Nut (primary drive gear) ①
NOTE:
Place a copper plate ② between the teeth of the primary drive gear ③ and primary driven gear to lock them.
CLUTCH INSPECTION
1. Inspect:
• Friction plates
Wear/damage → Replace the friction plates as a set.
2. Measure:
• Friction plate thickness
Out of specification → Replace the friction plates as a set.
Measure at four places.
Thickness (friction plate): 2.9 – 3.1 mm
<Wear limit>: 2.6 mm
3. Inspect:
• Clutch plate
Damage → Replace the clutch plates as a set.
4. Measure:
• Clutch plate warpage
Out of specification → Replace the clutch plates as a set.
Use a surface plate and a feeler gauge ①.
Warp limit (clutch plate): Less than 0.2 mm
4-38



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ILLUSTRATED SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑧ indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Engine
⑤ Carburetor
⑥ Chassis
⑦ Electrical system
⑧ Troubleshooting

Symbols ⑨ to ⑯ indicate the following.

⑨ Serviceable with engine mounted
⑩ Filling fluid
⑪ Lubricant
⑫ Special tool
⑬ Tightening torque
⑭ Wear limit, clearance
⑮ Engine speed
⑯ Electrical data

Symbols ⑰ to ㉒ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑰ Engine oil
⑱ Gear oil
⑲ Molybdenum disulfide oil
⑳ Wheel bearing grease
㉑ Lithium soap base grease
㉒ Molybdenum disulfide grease

Symbols ㉓ to ㉔ in the exploded diagrams indicate the following:

㉓ Apply locking agent (LOCTITE®)
㉔ Replace the part

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CHASSIS

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XVS1100AWR(C)/XVS1100ATR(C) WIRING DIAGRAM

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item		Standard
Model code		XVS1100: 5KSJ (For U.S.A.) 5KSK (For CAL) 5KSU (For U.S.A.) 5KSV (For CAL)
Dimensions		
Overall length		2460 mm (96.9 in)
Overall width		945 mm (37.2 in)
Overall height		1,095 mm (43.1 in)
Seat height		710 mm (28 in)
Wheelbase		1645 mm (64.8 in)
Minimum ground clearance		140 mm (5.5 in)
Minimum turning radius		3400 mm (133.9 in)
Basic weight		
With oil and a full fuel tank		285 kg (628 lb)
Tire		
Type		Tubeless
Size	front	130/90-16M/C 67S
	rear	170/80-15M/C 77S
Manufacturer	front	BRIDGESTONE/DUNLOP
	rear	BRIDGESTONE/DUNLOP
Type	front	EXEDRA G703/D404F
	rear	EXEDRA G702/D404G
Tire pressure (cold tire)		
0 ~ 90 kg (0 ~ 198 lb) load*		
	front	225 kPa (2.25 kg/cm^2, 32.6 psi)
	rear	250 kPa (2.5 kg/cm^2, 36.3 psi)
90 kg (198 lb) ~ Maximum load*		
	front	225 kPa (2.25 kg/cm^2, 32.6 psi)
	rear	250 kPa (2.5 kg/cm^2, 36.3 psi)
		* Load is the total weight of the cargo, rider, passenger and accessories.

MAINTENANCE SPECIFICATIONS

ENGINE

Item		Standard	Limit
Carburetor			
I.D. mark		5EL5 40 (U.S.A.)	•••
		5EL6 50 (CAL)	•••
Main jet	(M.J)	#1: #110, #2: #112.5	•••
Main air jet	(M.A.J)	#55	•••
Jet needle	(J.N)	5DL 43-53-1	•••
Needle jet	(N.J)	P-0M	•••
Pilot air jet	(P.A.J.1)	#63.8	•••
	(P.A.J.2)	#145	•••
Pilot outlet	(P.O)	1.0	•••
Pilot jet	(P.J)	#17.5	•••
Bypass 1	(B.P.1)	0.8	•••
Bypass 2	(B.P.2)	0.8	•••
Bypass 3	(B.P.3)	0.8	•••
Valve seat size	(V.S)	1.2	•••
Starter jet	(G.S.1)	#42.5	•••
Starter jet	(G.S.2)	0.8	•••
Throttle valve size	(Th.V)	#125	•••
Fuel level (above the line on the float chamber)	(F.L)	4 ~ 5 mm (0.16 ~ 0.20 in)	•••
Engine idle speed		950 ~ 1,050 r/min	•••
Intake vacuum		34.7 ~ 37.3 kPa (260 ~ 280 mmHg)	•••
Engine oil temperature		75 ~ 85°C (167 ~ 185°F)	•••
Fuel pump			
Type		Electrical type	•••
Model/manufacturer		UC-Z61B/MITSUBISHI	•••
Consumption amperage	<max>	0.8 A	•••
Output pressure		12 kPa (0.12 kg/cm^2,1.7 psi)	•••

CHASSIS

Item		Standard	Limit
Front suspension			
Front fork travel		140 mm (5.51 in)	•••
Fork spring free length		371.9 mm (14.64 in)	350 mm (13.78 in)
Fitting length		334.4 mm (13.17 in)	•••
Collar length		183 mm (7.20 in)	•••
Spring rate	(K1)	4.41 N/mm (0.45 kg/mm, 25.18 lb/in)	•••
	(K2)	6.37 N/mm (0.65 kg/mm, 36.37 lb/in)	•••
Stroke	(K1)	0 ~ 77.5 mm (0 ~ 3.05 in)	•••
	(K2)	77.5 ~ 140 mm (3.05 ~ 5.51 in)	•••
Optional spring		No	•••
Oil capacity		0.483 L (483 cm^3, 17.01 Imp OZ, 16.34 US OZ)	•••
Oil level		104 mm (4.09 in)	•••
Oil grade		Fork oil 10WT or equivalent	•••

Item		Standard	Limit
Rear suspension			
Shock absorber travel		51 mm (2.01 in)	•••
Spring free length		181 mm (7.13 in)	•••
Fitting length		169 mm (6.65 in)	•••
Spring rate	(K1)	132.3 N/mm (13.49 kg/mm, 755.43 lb/in)	•••
Stroke	(K1)	0 ~ 51 mm (0 ~ 2.01 in)	•••
Optional spring		No	•••
Front wheel			
Type		Cast wheel	•••
Rim size		16M/C × MT 3.00	•••
Rim material		Aluminum	•••
Rim runout limit	radial	•••	1.0 mm (0.04 in)
	lateral	•••	0.5 mm (0.02 in)
Rear wheel			
Type		Cast wheel	•••
Rim size		15M/C × MT4.50	•••
Rim material		Aluminum	•••
Rim runout limit	radial	•••	1.0 mm (0.04 in)
	lateral	•••	0.5 mm (0.02 in)

ELECTRICAL

Item	Standard	Limit
T.C.I.		
Pickup coil resistance/color	189 ~ 231 Ω at 20°C (68°F)/Gray – Black	•••
T.C.I. unit model/manufacturer	J4T142/MITSUBISHI	•••
Rectifier/regulator		
Regulator type	Semi-conductor, short-circuit type	•••
Model/manufacturer	SH678-11/SHINDENGEN	•••
No load regulated voltage	14.1 ~ 14.9 V	•••
Rectifier capacity	22 A	•••
Withstand voltage	200 V	•••

Item	Standard	Limit
Electric starter system		
Type	Constant mesh type	•••
Starter motor:		
Model/manufacturer	SM-13/MITSUBA	•••
Output	0.6 kW	•••
Armature coil resistance	0.025 ~ 0.035 Ω at 20°C (68°F)	•••
Brush overall length	12.5 mm (0.49 in)	4 mm (0.16 in)
Brush spring pressure	7.65 ~ 10.01 N (780 ~ 1021 g, 27.51 ~ 36.01 OZ)	•••
Commutator diameter	28 mm (1.10 in)	27 mm (1.06 in)
Mica undercut	0.7 mm (0.03 in)	•••
Starter relay:		
Model/manufacturer	MS5F-421/JIDECO	•••
Amperage rating	180 A	•••
Starting circuit cut-off relay		
Model/manufacturer	G8R-30Y-U/OMRON	•••
Coil resistance	202.5 ~ 247.5 Ω at 20°C (68°F)	
Thermostat switch		
Model/manufacturer	5FU/NIPPON THERMOSTAT	•••

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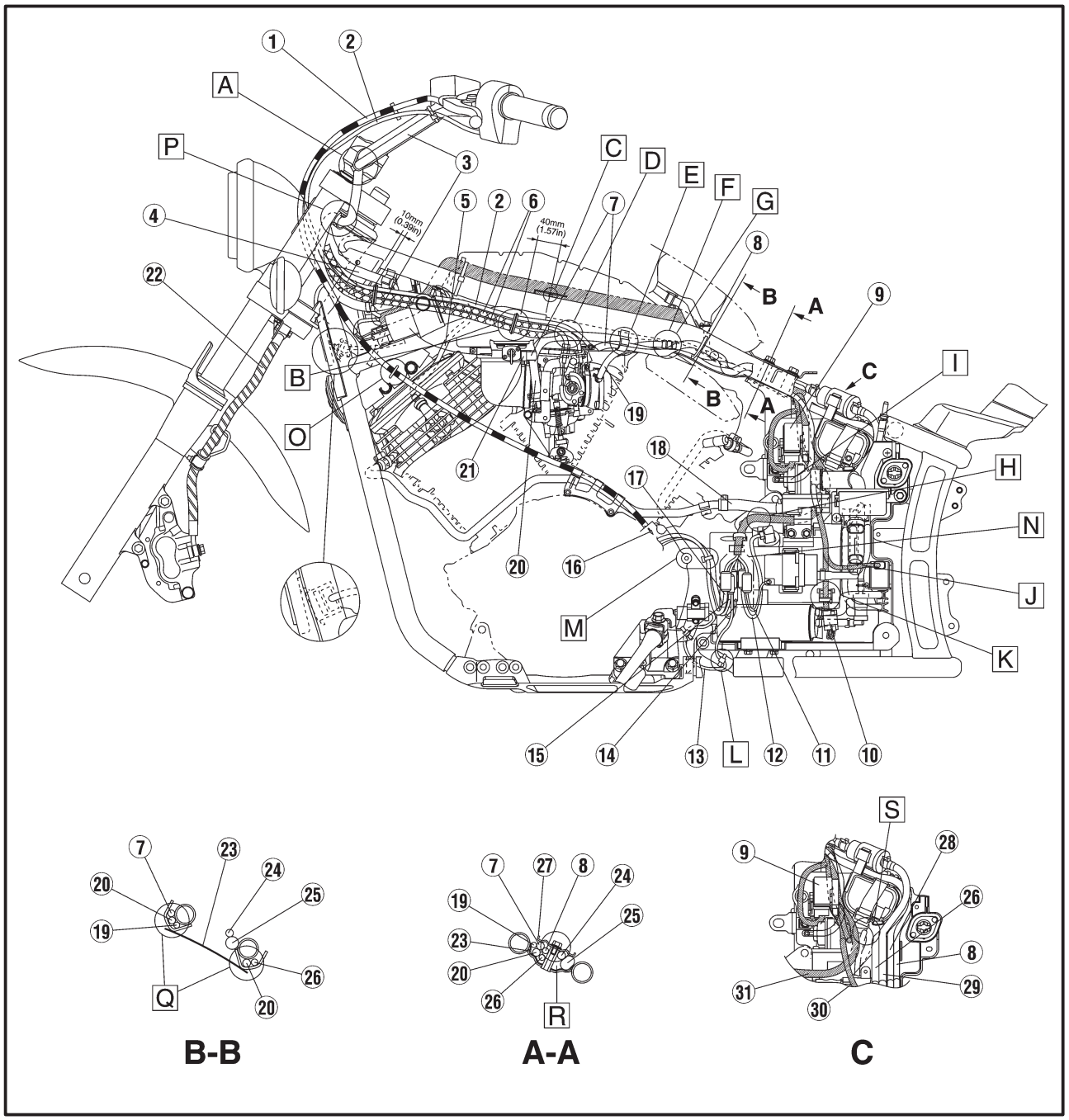
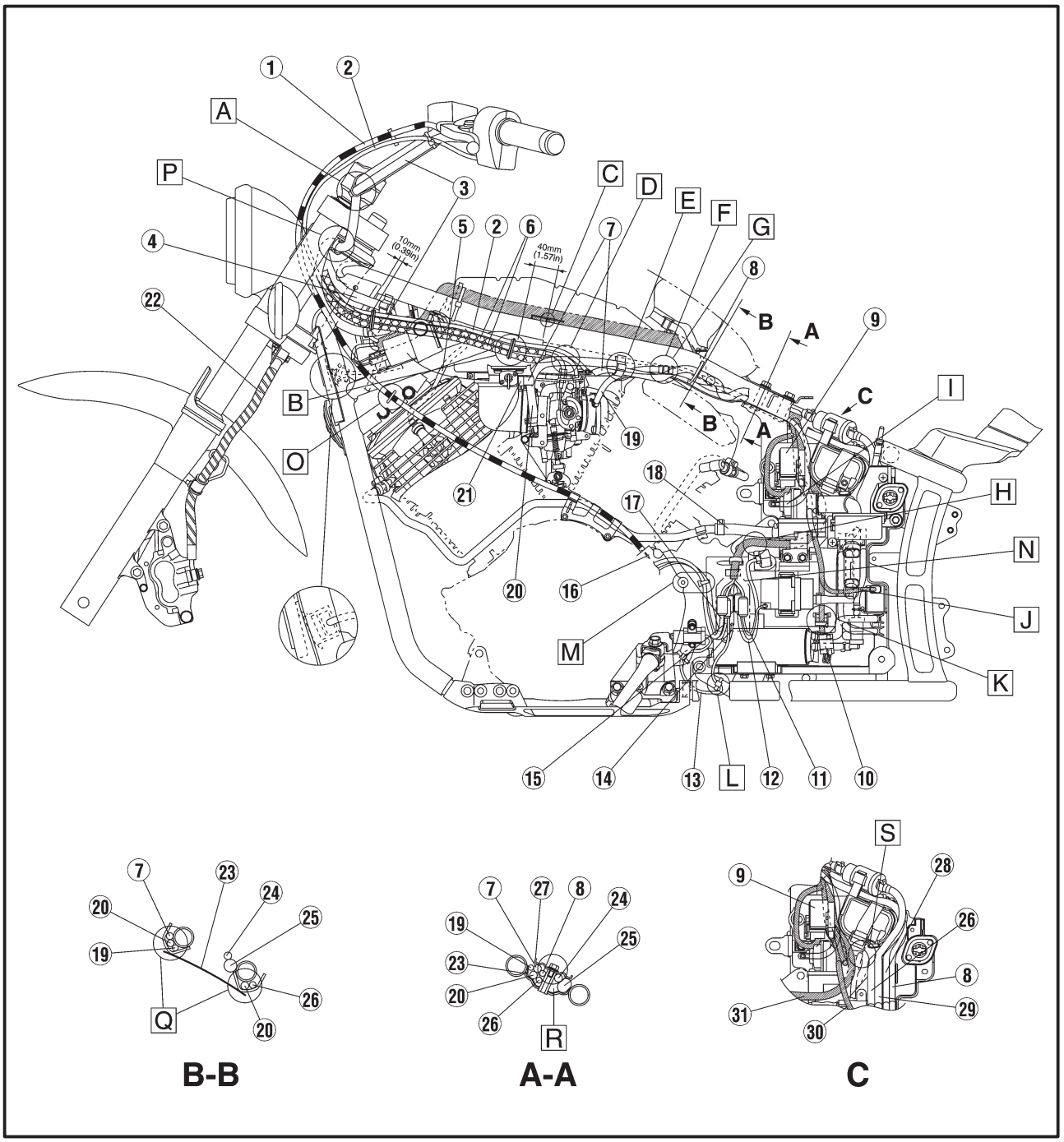
CABLE ROUTING

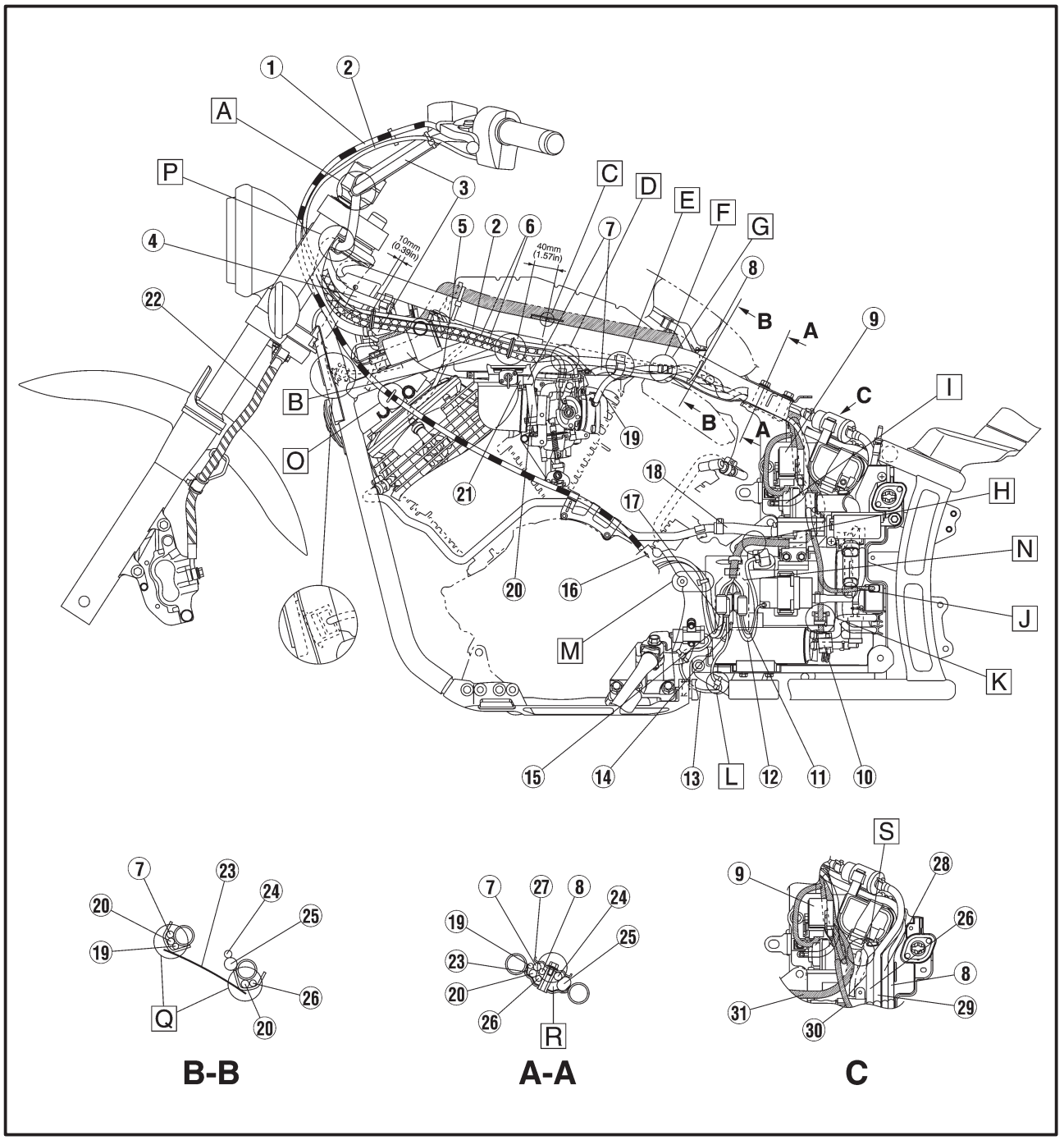
① Clutch cable
② Starter cable
③ Handlebar switch lead (left)
④ Handlebar switch lead (right)
⑤ Spark plug lead
⑥ Throttle cable
⑦ Fuel hose (fuel cock to filter)
⑧ Fuel breather hose (fuel tank roll over valve) (for CAL)
⑨ Fuse box
⑩ Alarm connector
⑪ Fuel pump lead
⑫ Speed sensor lead
⑬ Sidestand switch lead
⑭ Neutral switch lead
⑮ Pickup coil lead
⑯ To engine
⑰ A.C. magneto lead
⑱ Ventilation hose
⑲ Sensing hose (AI system to carburetor joint)
⑳ Fuel hose (fuel pump to carburetor)
㉑ Clip
㉒ Brake hose
㉓ Heat protector
㉔ Speedometer lead
㉕ Wire harness
㉖ Purge hose (carburetor to solenoid valve) (for CAL)
㉗ Fitting plate
㉘ Fuel hose (inlet) (fuel filter to fuel pump)
㉙ Fuel hose (outlet) (fuel pump to carburetor)
㉚ Alarm connector lead
㉛ Wire harness



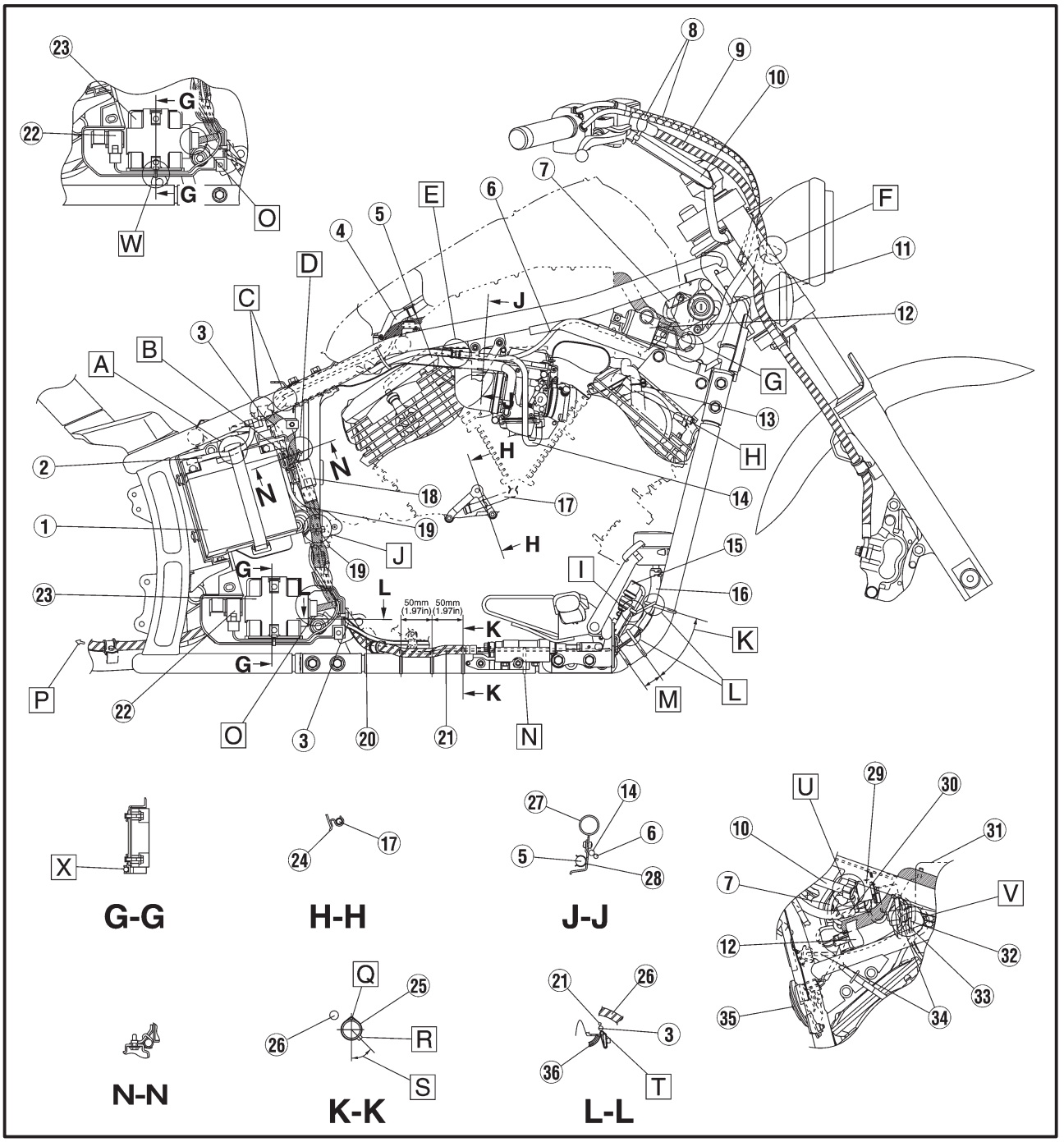
[A] Fasten the handlebar switch lead (left and right) to the handlebar with plastic locking tie and cut the end of tie.
[B] Lay out the throttle and starter cables in three rows and secure them with a clip. (Two points at the front and rear.) Care should be taken at this time so that the clip does not fall to the outside against the vertical face of the vehicle. Point the opening part of the clip to the inside of the vehicle.
[C] Clamp the wire harness with the hook of frame side.
[D] When installing the pipe of throttle cable press it inside.
[E] Clamp the fuel hoses to the frame with the clamp.
[F] Cross the fuel hose (fuel cock side) and fuel hose (carburetor side) between guide of frame and clamp. (carburetor side is upper)
[G] When connecting the sensing hose (carburetor joint to AI system) with a nozzle.
[H] Push the wire harness inside of the side cover.
[I] Push the sensing hose inside of the tool box plate and not bend the sensing hose.
[J] Through the wire harness of solenoid valve between AIS duct and fuel hose (for CAL).
[K] Fasten the alarm lead with a plastic band on the tool box plate.
[L] Fasten the sidestand switch lead to the bracket of tool box plate with plastic locking tie.



M Fasten the lead with locking tie near the side cover.
N Position the all connectors inside of the connector cover.
O Route the clutch cable through the cable guide.
P Fasten the handlebar switch leads (left and right) under the handle crown with a plastic band. Set the band at four notches and install it no slacking.
Q Route the each hoses through the frame guide and do not pinch it.
R When installing the fitting plate, do not pinch the each hoses and wireharness.
S When install the AI system push the wire harness to space of rear-side.

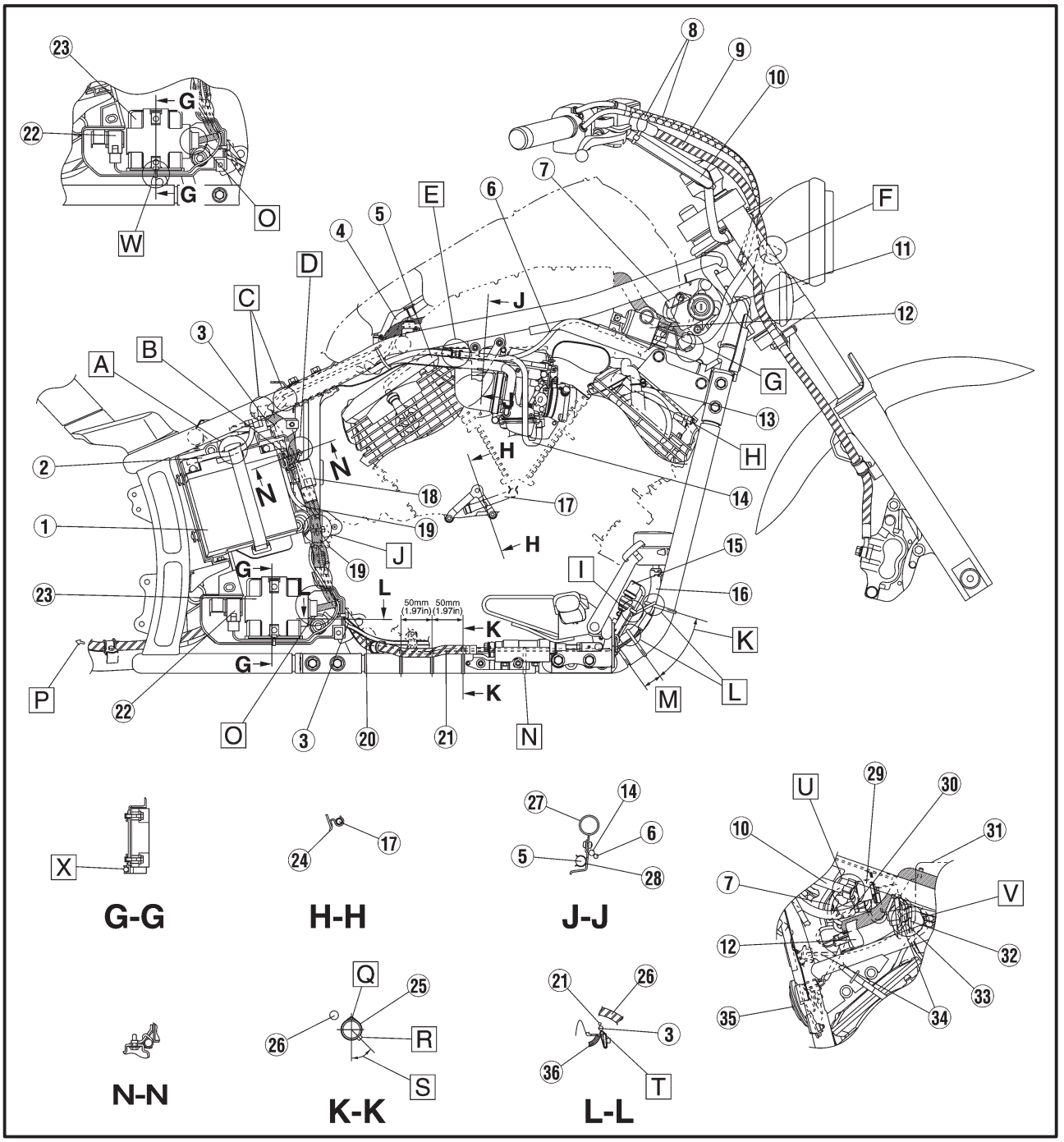


① Battery
② Battery positive (+) lead
③ Starter motor positive (+) lead
④ Speedometer lead
⑤ Fuel hose (fuel pump to carburetor)
⑥ Spark plug lead
⑦ Main switch lead
⑧ Throttle cable
⑨ Front brake hose
⑩ Handlebar switch lead (right)
⑪ Headlight lead
⑫ Ignition coil
⑬ Breather hose
⑭ Purge hose (carburetor to solenoid valve) (For CAL)
⑮ Rear brake switch
⑯ Reserve hose
⑰ Air filter drain hose
⑱ Delay relay
⑲ Battery negative (–) lead
⑳ Oil level switch lead
㉑ Rear brake light switch lead
㉒ Light reduce relay
㉓ Rectifier/regulator
㉔ Stay 1
㉕ Down tube
㉖ Rear brake hose
㉗ Frame
㉘ Stay 2
㉙ Turn signal relay
㉚ Handlebar switch lead (left)
㉛ Silencer
㉜ Throttle position sensor lead
㉝ Carburetor heater lead
㉞ Thermo switch lead
㉟ Horn

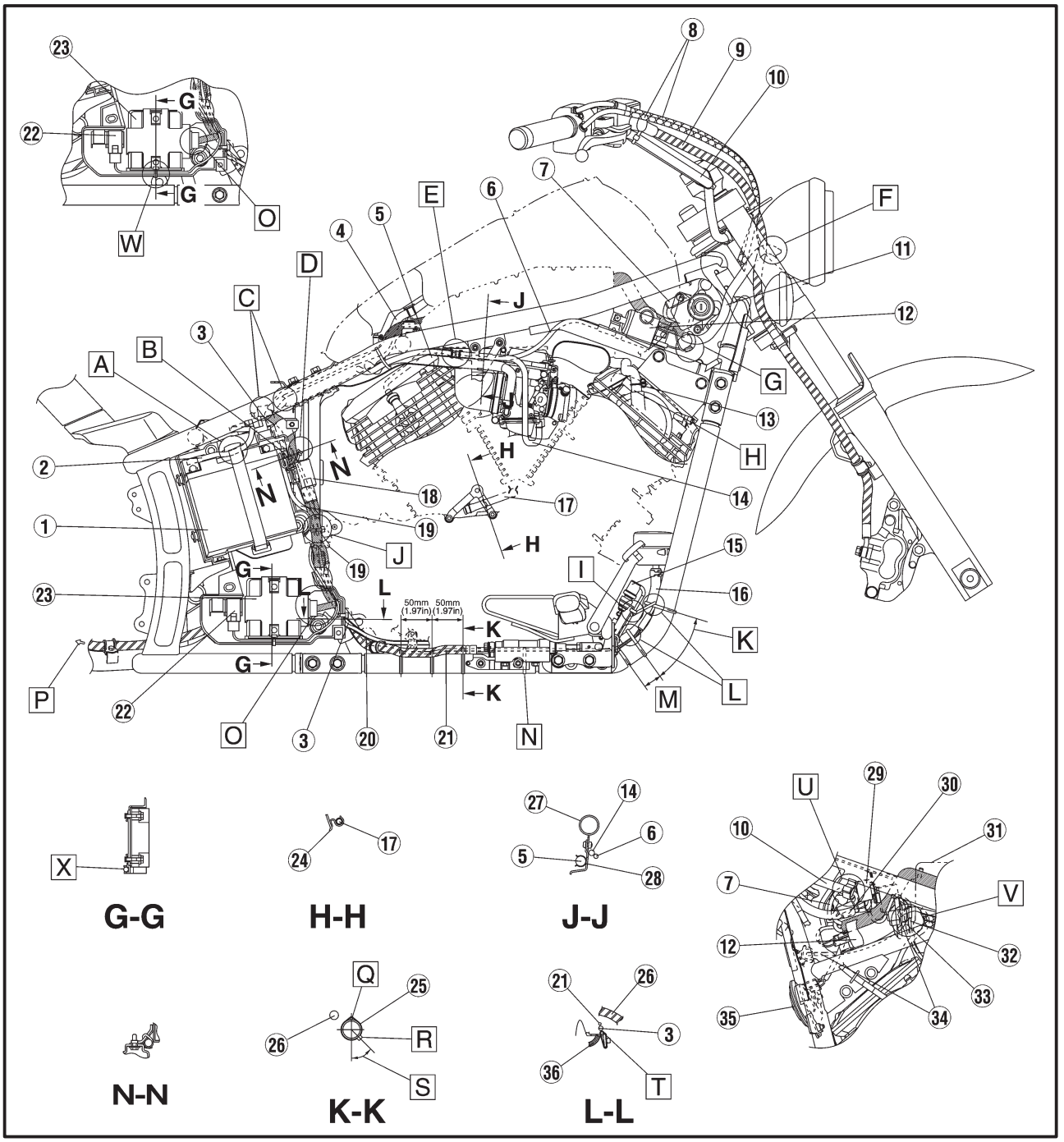


㊱ Rectifire/regulator and light (reduce relay) lead

Ⓐ Clamp the battery positive (+) lead to the battery with battery band.
Ⓑ Connect the battery negative (–) lead and push it in to the space between battery box and battery.
Ⓒ Push the wireharness into the space between frame and starter motor relay.
Ⓓ Route the harness and starter motor (+) lead, that are connected to the rectifier regulator and other equipment, by the outside of the frame side bracket and then secure it by passing the band through the weight saving hole of the bracket. (The securing point should be within 0 to 10 mm (0 to 0.39 in) right above the junction point of harness side leads that are connected with the battery (–) lead.)



E Connect the purge hose (carburetor side-solenoid valve side) with joint, knob is out side of frame.
F Route the front turn signal/position light lead and headlight lead through the rear of headlight body hole.
G Connect the ignition coil lead at red tape to the right side.
H Knob of clip is rearside of body.
I Fasten the rear brake switch lead to the rear brake switch bracket with a plastic locking tie and cut of the end, inside of frame.
J Fasten the wire harness, starter motor positive (+) lead and battery negative (–) lead to the frame with a plastic locking tie.
K 70 mm (2.76 in)
L Fasten the rear brake switch lead and master cylinder reservoir hose to the down tube with a plastic locking tie, and cut the end of locking tie and position is inside of frame.
M 20 mm (0.79 in) (from bead end.)
N Locate the band to forward of down tube.
O Make sure to insert the rectifier regulator coupler sufficiently until the sound is heard.
P To rear brake.
Q Fasten the rear brake switch lead with a band to down tube. (four point)
R Cutting part at the edge of the band.
S 30° ~ 45°



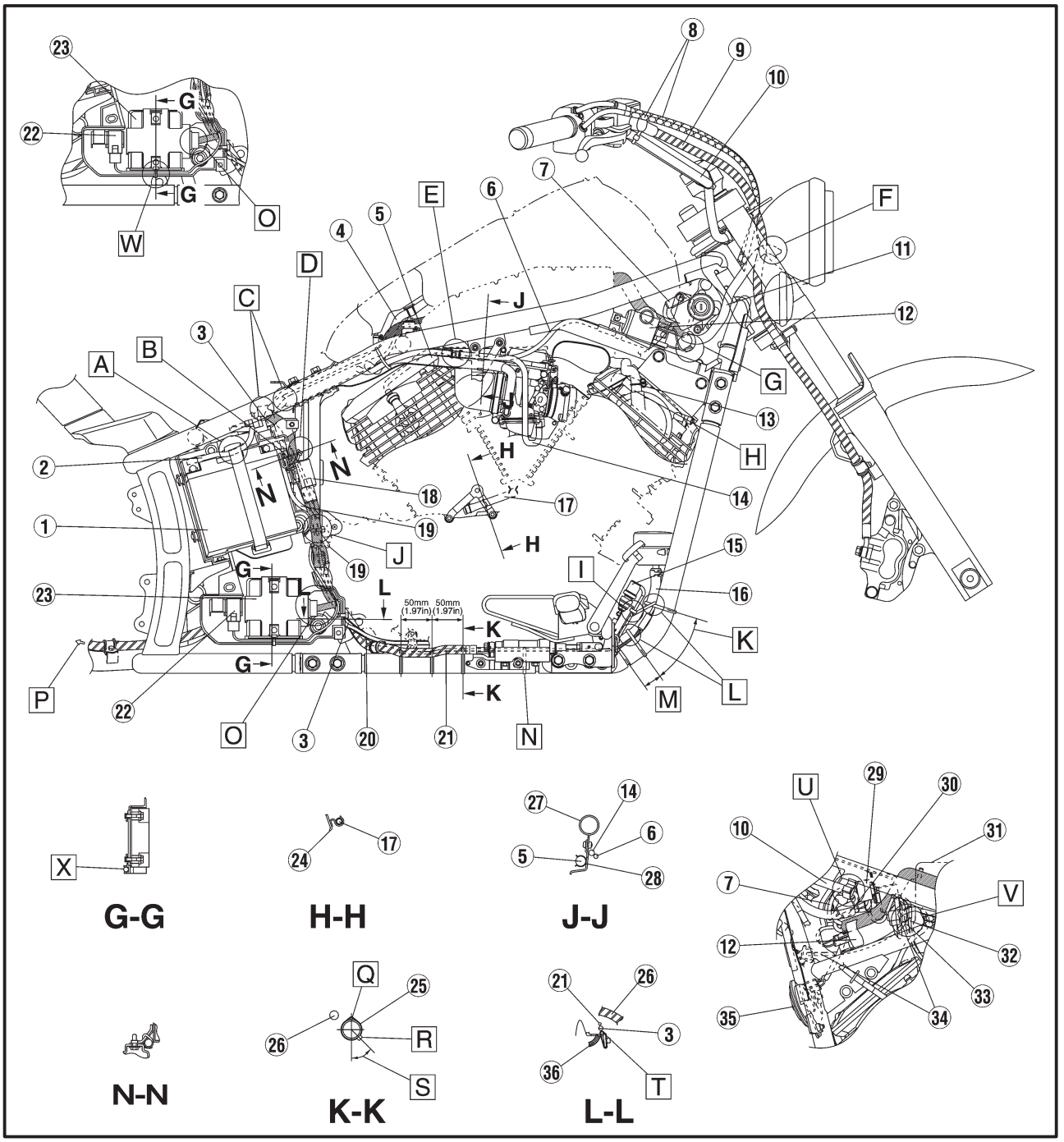
T Fasten the oil level sensor lead with a locking tie to battery box. Fix to the battery box with the band. To fix, align the band to the bottom of the box's hole while fixing the lead to the back of the box (inside the body). The cutting part at the edge of the band comes to the front side of the body.

U Clamp the handlebar switch lead (right) to the frame with a holder. The part to open and shut is outside of the body.

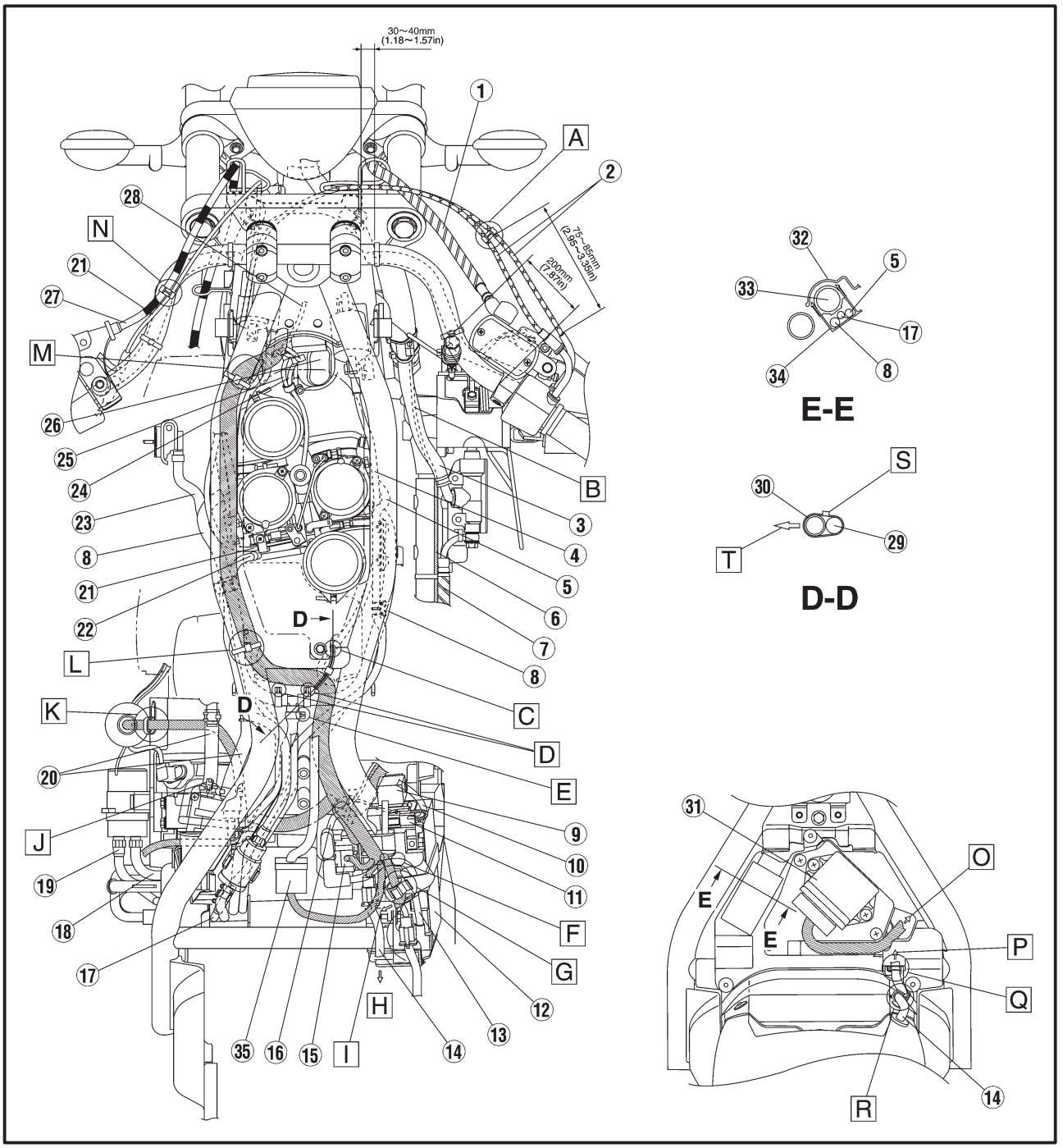
V Arrange the throttle position sensor connector, carburetor heater connector and thermo switch connector between the starting circuit cut off relay and high tension code.

W Secure to the battery box with the band, cut the surplus section and then point the locking section to the regulator side.

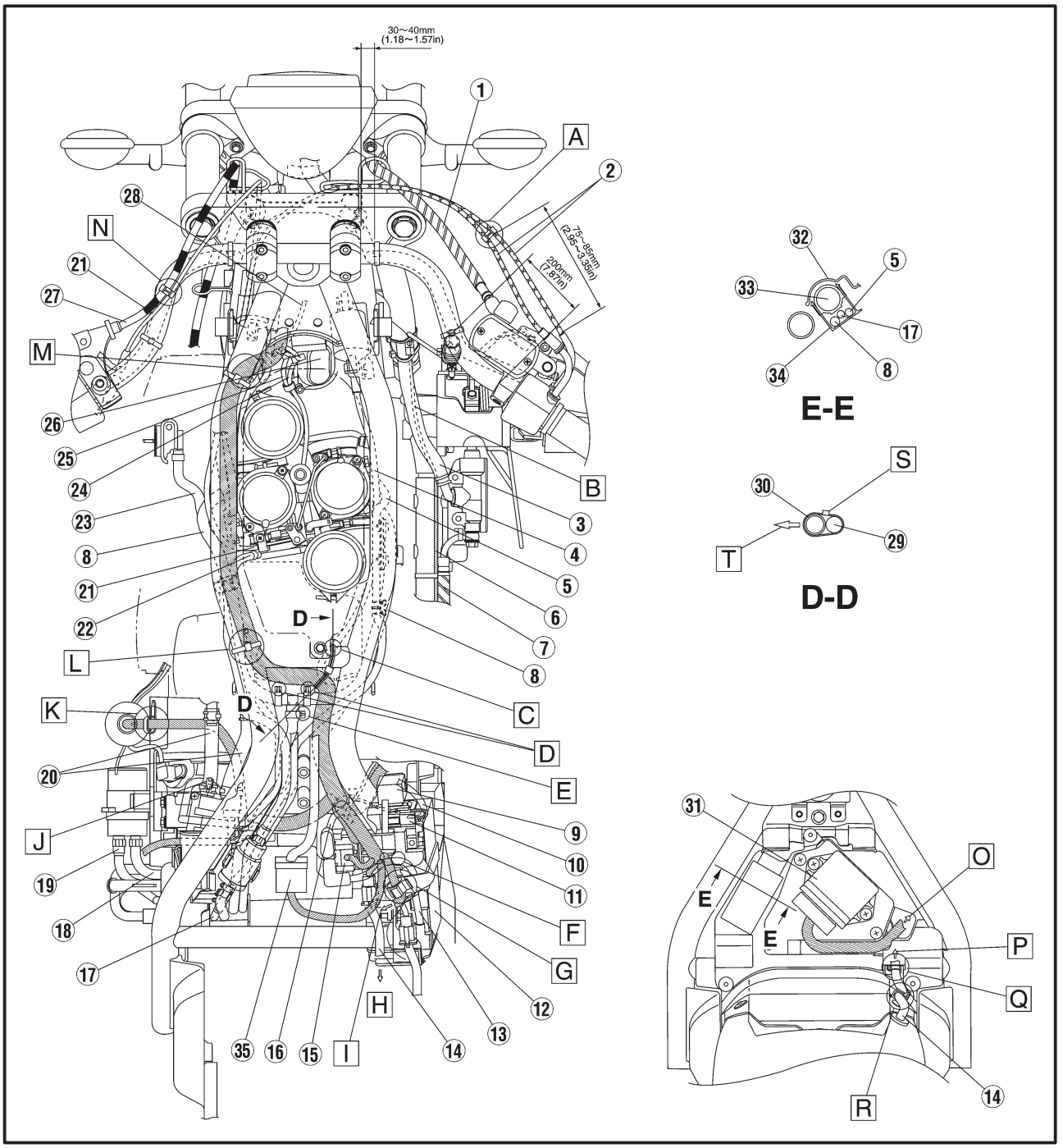
X Push the light reduce lead and the terminal-coupler lead for the carburetor heater into the deepest position in the groove of the battery box.



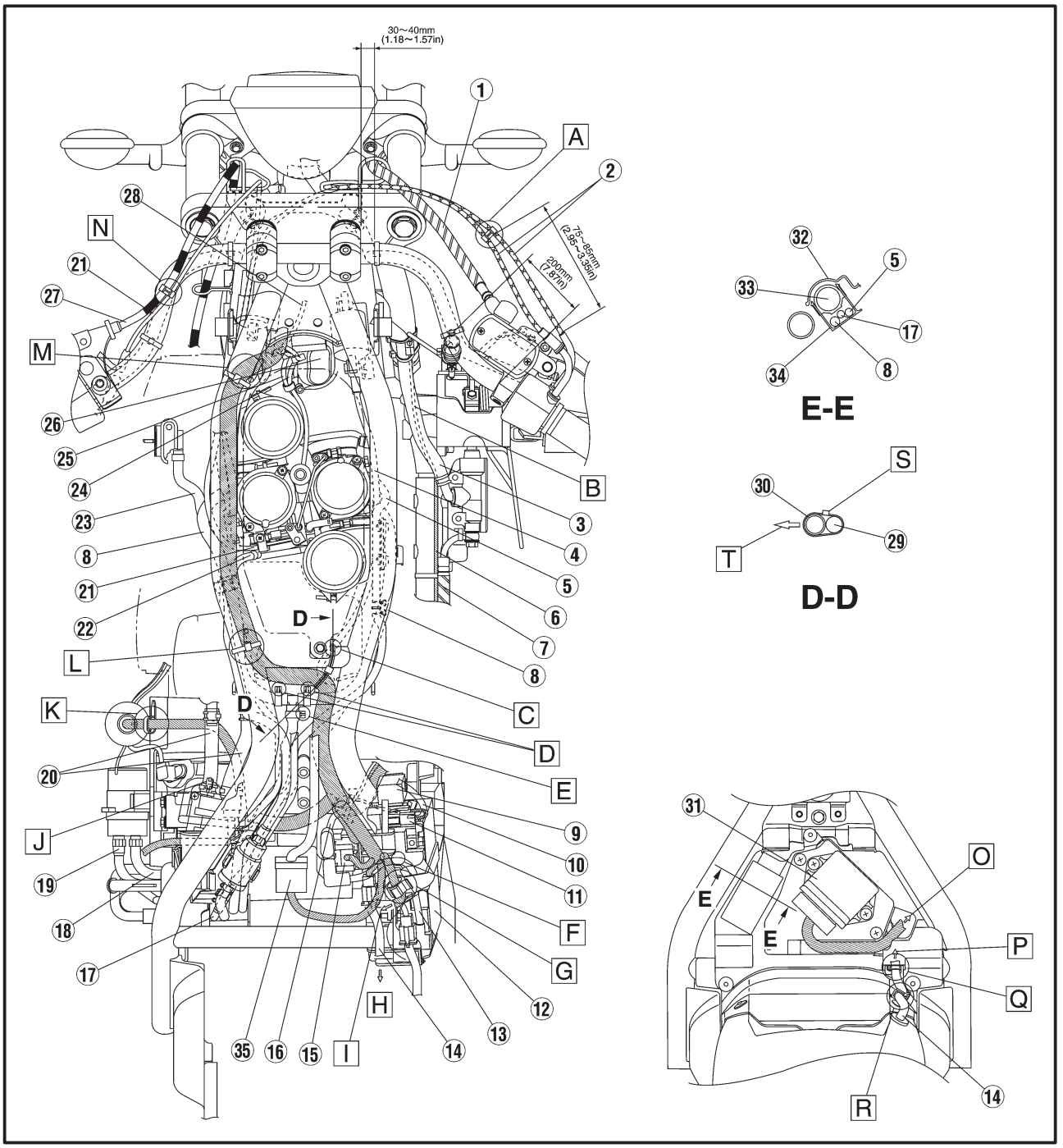
① Front brake hose
② Throttle cable
③ Master cylinder reservoir hose
④ Spark plug lead
⑤ Purge hose (carburetor to solenoid valve) (for CAL)
⑥ Rear brake light switch lead
⑦ Rear brake hose
⑧ Fuel hose (fuel pump to carburetor)
⑨ Delay relay
⑩ Battery negative (–) lead
⑪ Battery negative (–) lead connector
⑫ Battery
⑬ Battery positive (+) lead
⑭ Tail/brake light lead
⑮ Starter relay
⑯ Starter motor positive (+) lead
⑰ Fuel tank breather hose (fuel tank to roll over valve) (for CAL)
⑱ Fuel pump outlet hose
⑲ Fuel pump inlet hose
⑳ Ventilation hose
㉑ Starter cable
㉒ Sensing hose (AI system to carburetor joint)
㉓ Fuel hose (fuel cock to fuel filter)
㉔ Throttle position sensor lead
㉕ Carburetor heater lead
㉖ Tappet cover
㉗ Clutch cable
㉘ Thermo switch lead
㉙ Wire harness
㉚ Frame
㉛ Igniter unit
㉜ Igniter plate
㉝ Fuel filter
㉞ Tool box plate
㉟ Speedometer lead connecter



A Clamp the throttle cables with the holder. Position the end of clip downword.
B Route the rear brake switch lead under the master cylinder reservor hose.
C Position the band end of right side bracket.
D Position the steel band end to forward.
E Position the steel band end to right side.
F Route the battery positive (+) lead through the slit of the battery box.
G Secure the igniter unit lead and tail brake light lead to the frame with a clamp. Point the open/close section to the upper side of the vehicle.
H To the rear fender.
I Connect the wire harness to the igniter unit through the hole of igniter plate.
J Position the mark on the steel band to forward.
K Fasten the wire harness with a band on the tool box plate.
L Fasten the wire harness to the frame with a plastic locking tie. Position the locking tie front of the holder.
M Route the wire harness outside of the guide on the frame.
N Clamp the clutch cable and starter cable with a holder. Position the end of holder down side.



[O] Route the igniter lead through the igniter plate hole to the wire-harness.
[P] To the wire harness.
[Q] Clamp the tail/brake light lead with mud guard clamp.
[R] Clamp the tail/brake light lead with a holder on the mud guard.
[S] Position the locking tie upward.
[T] Forward.



EAS00036

PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended checks and adjustments. If followed, these preventive maintenance procedures will ensure more reliable vehicle operation, a longer service life and reduce the need for costly overhaul work. This information applies to vehicles already in service as well as to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM

NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS				
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months
1	*	Valve clearance	• Check and adjust valve clearance when engine is cold.	√	√	√	√	√	√
2		Spark plugs	• Check condition. • Adjust gap and clean. • Replace at 8,000 mi (13,000 km) or 12 months and thereafter every 8,000 mi (13,000 km) or 12 months.		√	Replace.	√	Replace.	√
3	*	Crankcase ventilation system	• Check ventilation hose for cracks or damage. • Replace if necessary.		√	√	√	√	√
4	*	Fuel line	• Check fuel hoses for cracks or damage. • Replace if necessary.		√	√	√	√	√
5	*	Fuel filter	• Replace initial 20,000 mi (31,000 km) and thereafter every 20,000 mi (31,000 km).						√
6	*	Exhaust system	• Check for leakage. • Tighten if necessary. • Replace gasket(s) if necessary.		√	√	√	√	√
7	*	Carburetor synchronization	• Adjust synchronization of carburetors.	√	√	√	√	√	√
8	*	Idle speed	• Check and adjust engine idle speed. • Adjust cable free play.		√	√	√	√	√
9	*	Evaporative emission control system**	• Check control system for damage. • Replace if necessary.				√		√

* Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.

** California only

GENERAL MAINTENANCE AND LUBRICATION CHART

NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS				
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months
1		Engine oil	• Replace. • Warm engine before draining.	√	√	√	√	√	√
2	*	Engine oil filter element	• Replace.	√		√		√	
3		Air filter element	• Clean or replace if necessary.		√	√	√	√	√
4	*	Brake system	• Check operation fluid level, and fluid leakage. • Correct accordingly. • Replace pads if necessary.	√	√	√	√	√	√
5	*	Clutch	• Check operation. • Adjust or replace cable.	√	√	√	√	√	√
6	*	Final gear oil	• Check oil level and leakage. • Replace at initial 600 mi (1,000 km) or 1 month and thereafter every 18,000 mi (25,000 km) or 24 months. • Hypoid gear oil SAE 80 (API GL4)	Replace.		Check.		√	
7	*	Control and meter cables	• Apply chain, lube thoroughly. • Yamaha Chain and Cable Lube or engine oil SAE 10W-30 (API SE)	√	√	√	√	√	√

GENERAL MAINTENANCE AND LUBRICATION CHART

NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS				
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months
8	*	Swingarm pivot shaft	• Check swingarm pivot for play. • Correct if necessary. • Moderately repack every 16,000 mi (25,000 km) or 24 months with lithium-soap-based grease.					Repack.	
9	*	Rear suspension link pivots	• Check operation. • Correct if necessary.			√		√	
10		Brake and clutch lever pivot shafts	• Apply chain lube thoroughly. • Lithium-soap-based grease.		√	√	√	√	√
11		Brake pedal and shift pedal shafts	• Apply chain lube thoroughly. • Lithium-soap-based grease.		√	√	√	√	√
12		Sidestand pivot	• Check operation. • Lubricate and repair if necessary. • Lithium-soap-based grease.		√	√	√	√	√
13	*	Front fork	• Check operation and for oil leakage. • Correct accordingly.		√	√	√	√	√
14	*	Steering bearings	• Check bearing play and steering for smooth operation. • Correct if necessary. • Moderately repack every 18,000 mi (25,000 km) or 24 months with lithium-soap-based grease.		√	√	√	Repack.	√
15	*	Wheel bearings	• Check bearings for looseness and damage. • Replace if necessary.		√	√	√	√	√
16	*	Wheels	• Check runout and for damage.		√	√	√	√	√
17	*	Sidestand switch	• Check operation. • Replace if necessary.	√	√	√	√	√	√
18	*	Tires	• Check tire tread wear and for damage. • Replace if necessary.		√	√	√	√	√
19	*	Shock absorber assembly	• Check operation and for oil leakage. • Replace if necessary.		√	√	√	√	√
20	*	Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened. • Tighten if necessary.		√	√	√	√	√
21	*	Throttle grip housing and cable	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.	√	√	√	√	√	√

* Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.

NOTE:

From 24,000 mi (37,000 km) or 36 months, repeat the maintenance intervals starting from 4,000 mi (7,000 km) or 6 months.

NOTE:

- Air filter
  - This model's air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
  - The air filter element needs to be replaced more frequently when riding in unusually wet or dusty areas.
- Hydraulic brake service
  - After disassembling the brake master cylinders and calipers, always change the fluid. Regularly check the brake fluid levels and fill the reservoirs as required.
  - Every two years replace the internal components of the brake master cylinders and calipers, and change the brake fluid.
  - Replace the brake hoses every four years and if cracked or damaged.
- Engine oil type
  - Yamalube 4 (20W-40) or engine oil SAE 20W-40 (API SE) for temperatures of 5°C (40°F) or above.
  - Yamalube 4 (10W-30) or engine oil SAE 10W-30 (API SE) for temperatures of 15°C (60°F) or below.

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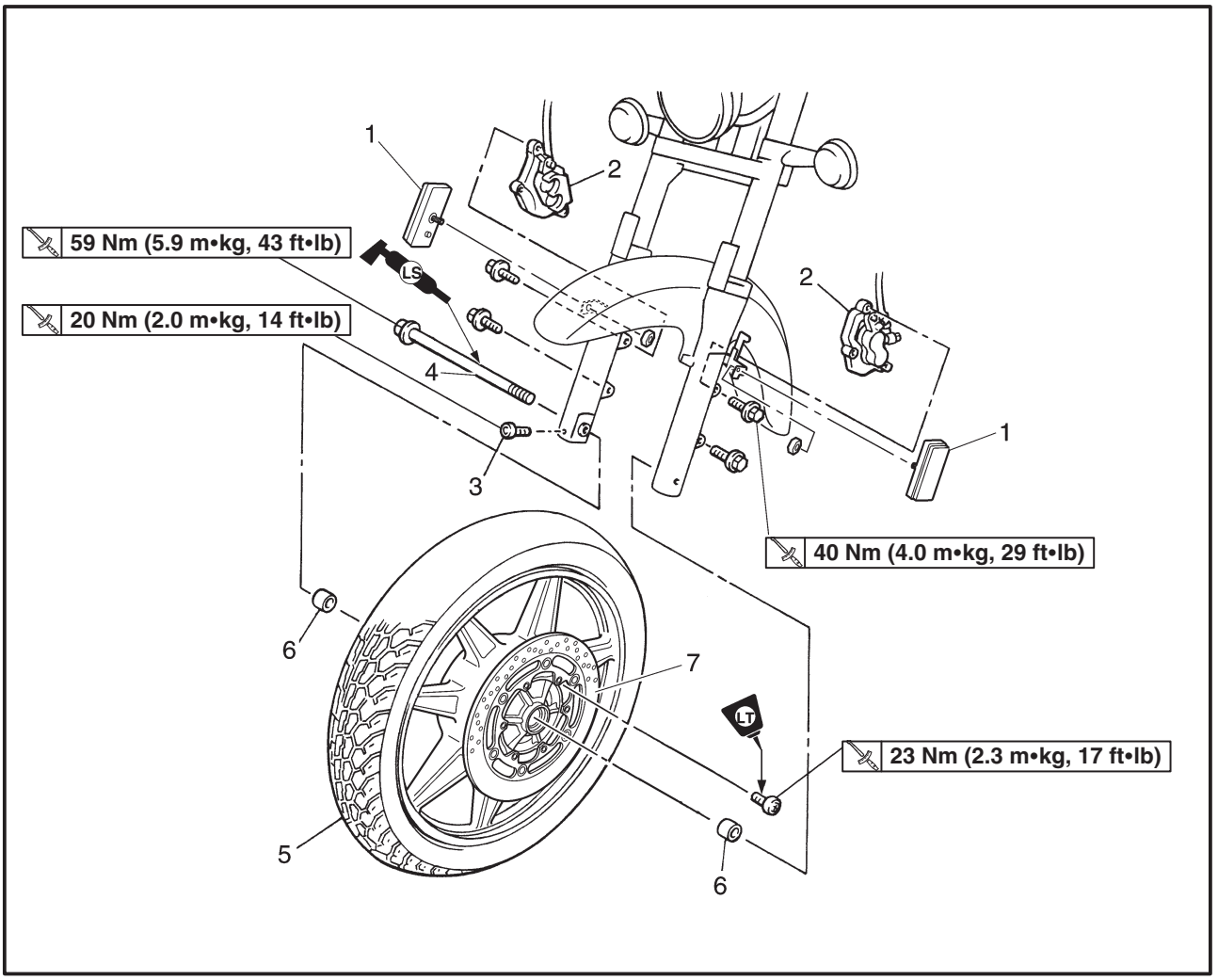
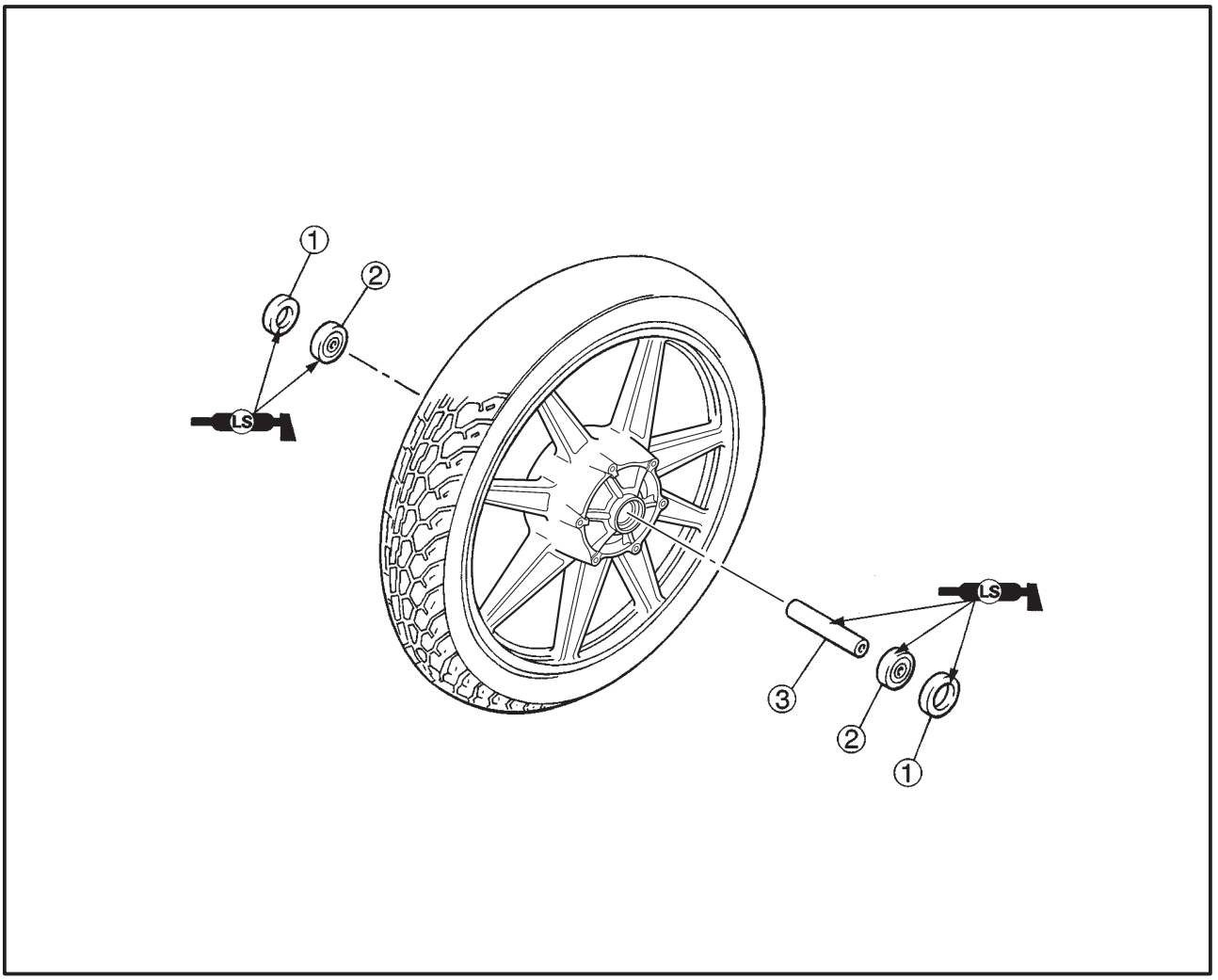
FRONT WHEEL AND BRAKE DISCS



Order	Job name/Part name	Q'ty	Remarks
	Removing the front wheel and brake discs		Remove the parts in the order listed. Stand the motorcycle on a level surface. **⚠ WARNING** **Securely support the motorcycle so there is no danger of it falling over.**
1	Reflector	2	
2	Brake calipers	2	
3	Front wheel axle pinch bolt	1	Refer to "REMOVING/INSTALLING THE FRONT WHEEL".
4	Front wheel axle	1	
5	Front wheel assembly	1	
6	Collars	2	Refer to "INSTALLING THE FRONT WHEEL".
7	Brake discs	2	
			For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Disassembling the front wheel		Disassemble the parts in the order listed.
①	Oil seals	2	
②	Bearings	2	
③	Collar	1	
			For assembly, reverse the disassembly procedure.

EAS00521
REMOVING THE FRONT WHEEL

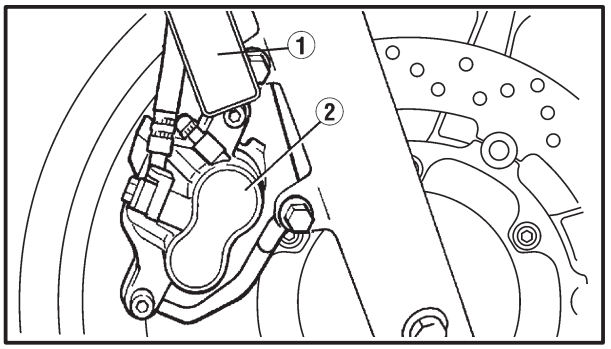
1. Stand the motorcycle on a level surface.

⚠ WARNING

Securely support the motorcycle so that there is no danger of it falling over.

NOTE:

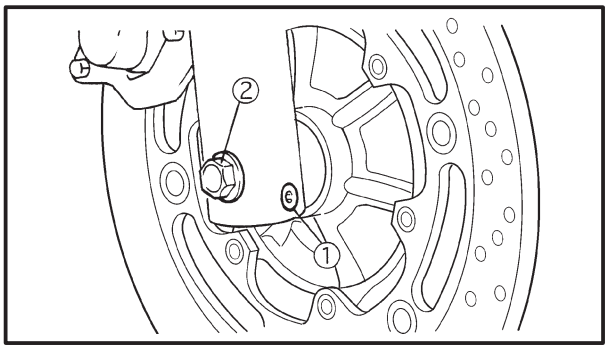
Place the motorcycle on a suitable stand so that the front wheel is elevated.



2. Remove:
   - reflectors ① (left and right)
   - brake calipers ② (left and right)

NOTE:

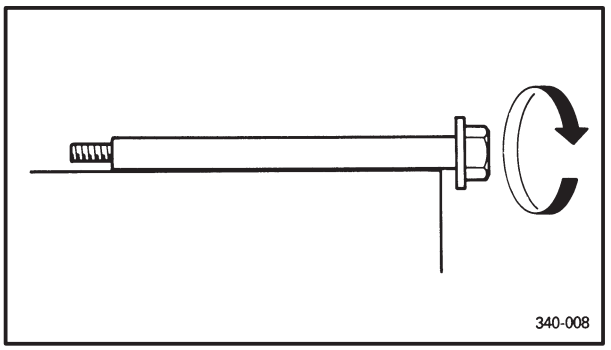
Do not squeeze the brake lever when removing the brake calipers.



3. Loosen:
   - pinch bolt (front wheel axle) ①
   - front wheel axle ②
4. Elevate:
   - front wheel

NOTE:

Place the motorcycle on a suitable stand so that the front wheel is elevated.



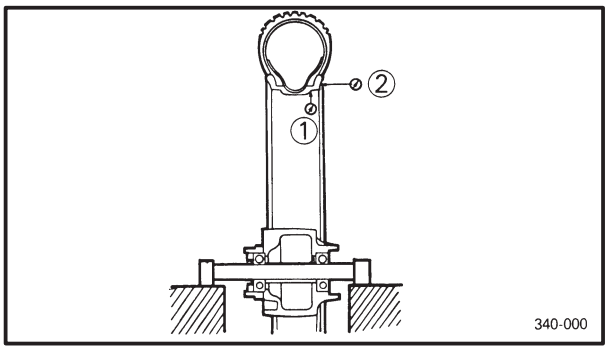
EAS00526
CHECKING THE FRONT WHEEL

1. Check:
   - wheel axle
     Roll the wheel axle on a flat surface.
     Bends → Replace.

⚠ WARNING

Do not attempt to straighten a bent wheel axle.

2. Check:
   - tire
   - front wheel
     Damage/wear → Replace.
     Refer to “CHECKING THE TIRES” and “CHECKING THE WHEELS” in chapter 3.



3. Measure:
   • front wheel radial runout ①
   • front wheel lateral runout ②
   Over the specified limits → Replace.

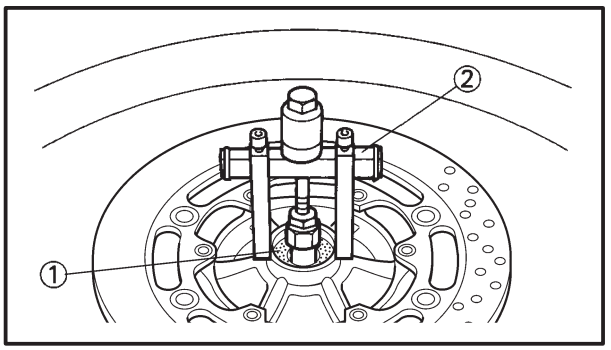
Front wheel radial runout limit
1.0 mm (0.04 in)
Front wheel lateral runout limit
0.5 mm (0.02 in)

4. Check:
   • collars
   Damage/wear → Replace.

⚠ WARNING

- **New tires have a relatively low grip on the road surface until they have been slightly worn.**
  Therefore, approximately 100 km (62 mi) should be traveled at normal speed before any highspeed riding is done.

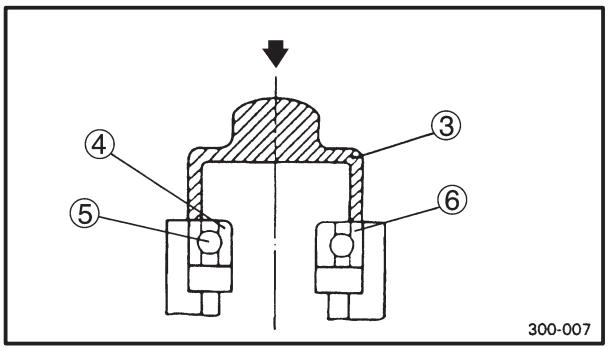
5. Check
   • wheel bearings
   Front wheel turns roughly or is loose → Replace the wheel bearings.
   • oil seals
   Damage/wear → Replace.
6. Replace:
   • wheel bearings New
   • oil seals New



a. Clean the outside of the front wheel hub.
b. Remove the oil seals ① with a flat-head screwdriver.

NOTE:
To prevent damaging the wheel, place a rag between the screwdriver and the wheel surface.

c. Remove the wheel bearings with a general bearing puller ②.
d. Install the new wheel bearings and oil seals in the reverse order of disassembly.

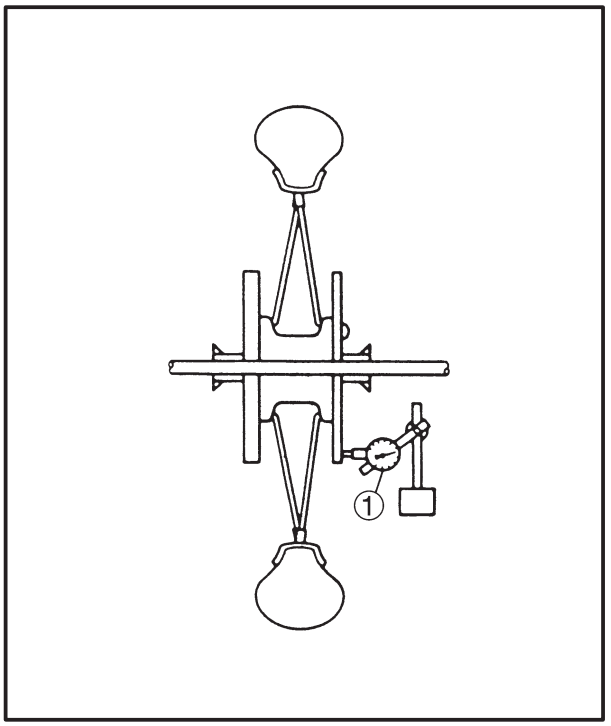


CAUTION:

Do not contact the wheel bearing center race ④ or balls ⑤. Contact should be made only with the outer race ⑥.

NOTE:

Use a socket ③ that matches the diameter of the wheel bearing outer race and oil seal.



EAS00531

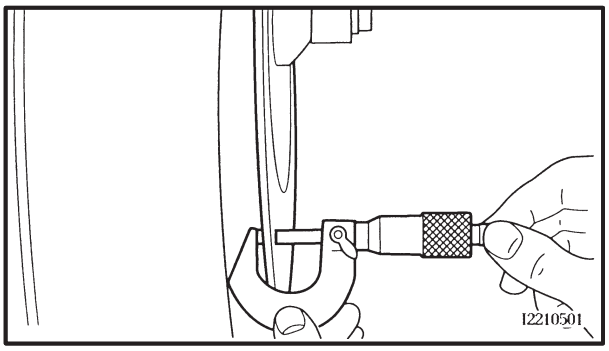
CHECKING THE BRAKE DISCS

The following procedure applies to all of the brake discs.

1. Check:
   - brake disc
     Damage/galling → Replace.
2. Measure:
   - brake disc deflection ①
     Out of specification → Correct the brake disc deflection or replace the brake disc.

Brake disc deflection limit (maximum)
Front: 0.15 mm (0.006 in)
Rear: 0.15 mm (0.006 in)

a. Place the motorcycle on a suitable stand so that the wheel is elevated.
b. Before measuring the front brake disc deflection, turn the handlebar to the left or right to ensure that the front wheel is stationary.
c. Remove the brake caliper.
d. Hold the dial gauge at a right angle against the brake disc surface.
e. Measure the deflection 2 ~ 3 mm (0.078 ~ 0.12 in) below the edge of the brake disc.



3. Measure:
   • brake disc thickness
   Measure the brake disc thickness at a few different locations.
   Out of specification → Replace.

Brake disc thickness limit (minimum)
Front: 4.5 mm (0.18 in)
Rear: 5.5 mm (0.22 in)

4. Adjust:
   • brake disc deflection

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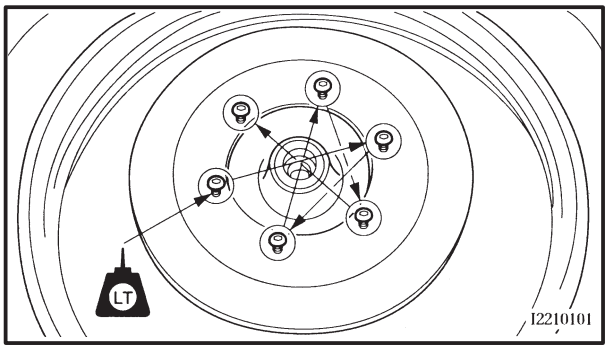
a. Remove the brake disc.
b. Rotate the brake disc by one bolt hole.
c. Install the brake disc.

NOTE:

Tighten the brake disc bolts in stages and in a crisscross pattern.



Brake disc bolt
23 Nm (2.3 m•kg, 17 ft•lb)
LOCTITE®

d. Measure the brake disc deflection.
e. If out of specification, repeat the adjustment steps until the brake disc deflection is within specification.
f. If the brake disc deflection cannot be brought within specification, replace the brake disc.

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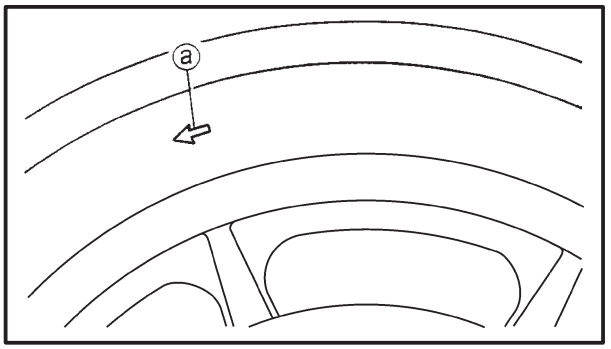
EAS00544

INSTALLING THE FRONT WHEEL

The following procedure applies to both brake discs.

1. Lubricate:
   - wheel axle
   - oil seallips

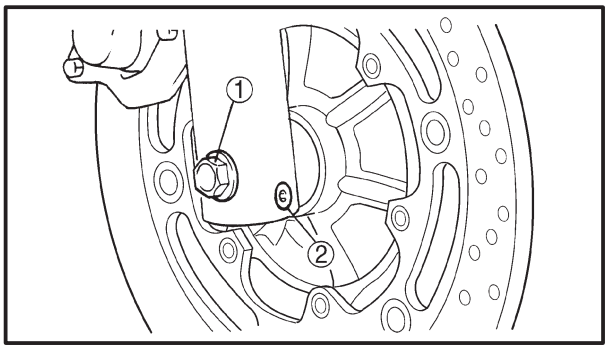
	Recommended lubricant **Lithium soap base grease**



2. Install:
   - front wheel assembly

NOTE:

The arrow mark ⓐ on the tire must point in the direction of the wheel.



3. Tighten:
   - wheel axle ① — **59 Nm (5.9 m•kg, 29 ft•lb)**
   - wheel axle pinch bolt ② — **20 Nm (2.0 m•kg, 14 ft•lb)**

CAUTION:

Before tightening the wheel axle nut, push down hard on the handlebar several times and check if the front fork rebounds smoothly.

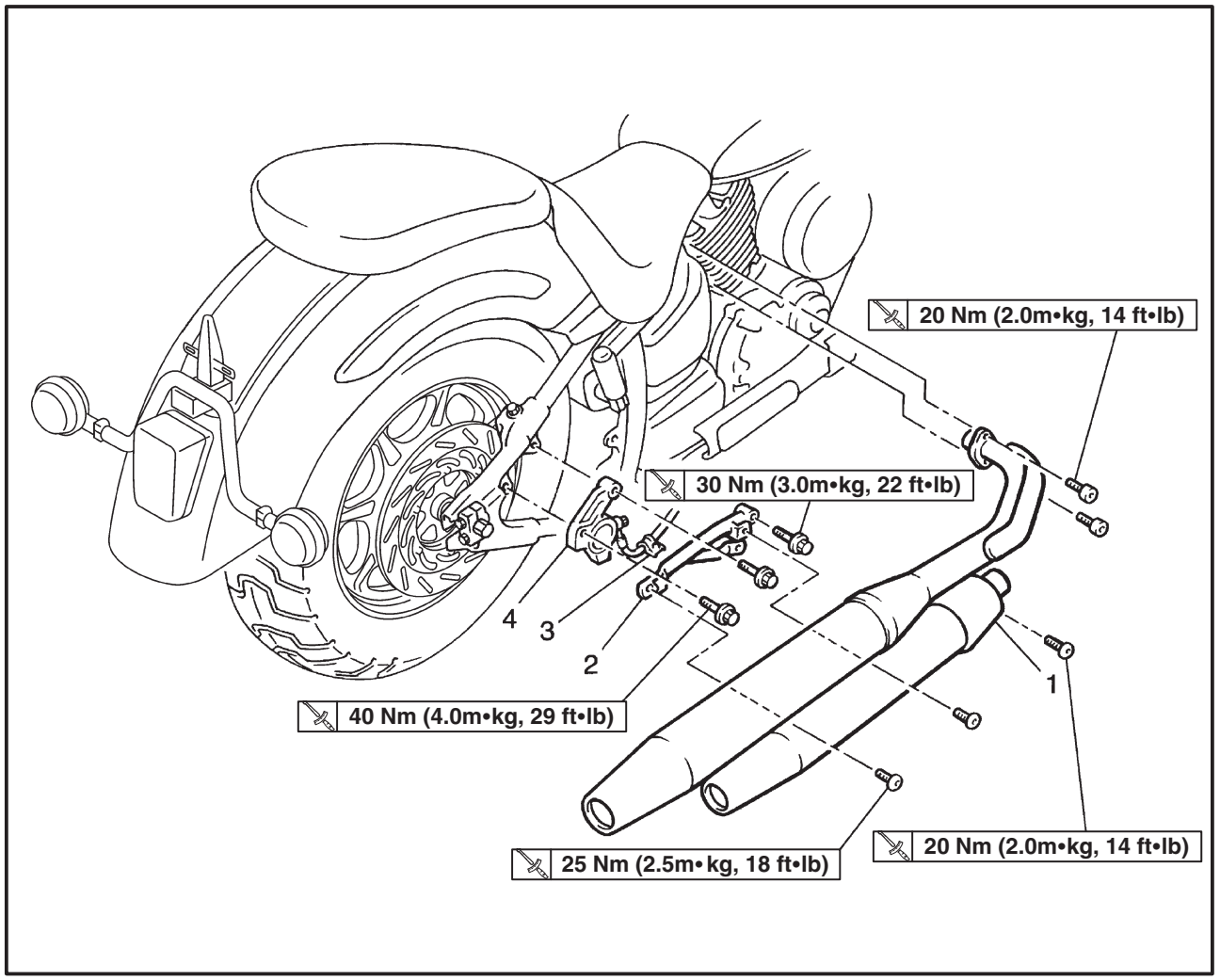
4. Install:
   - brake calipers — **40 Nm (4.0 m•kg, 29 ft•lb)**
   - reflectors

⚠ WARNING

Make sure that the brake hose is routed properly.

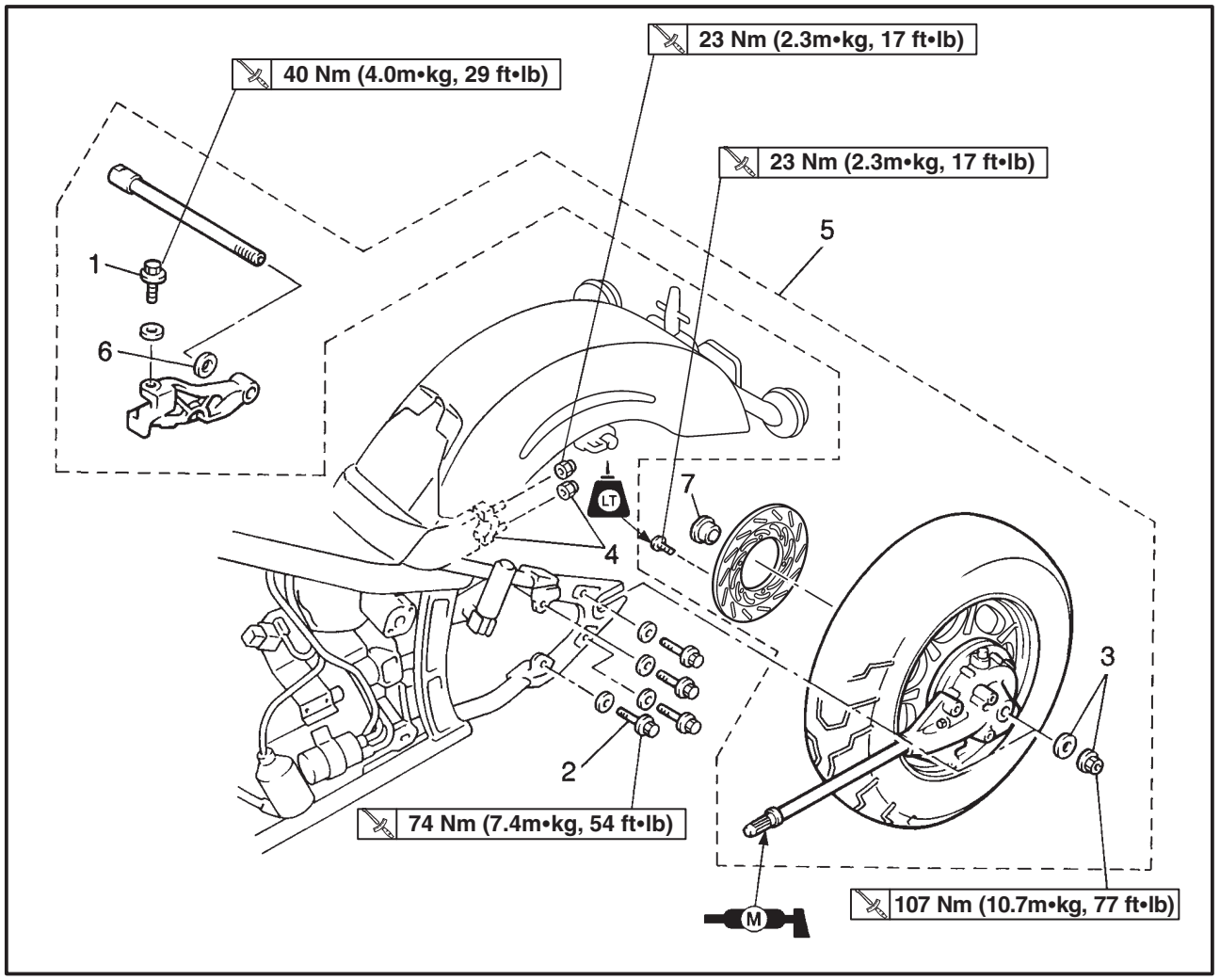
REAR WHEEL AND BRAKE DISC

MUFFLER AND BRAKE CALIPER

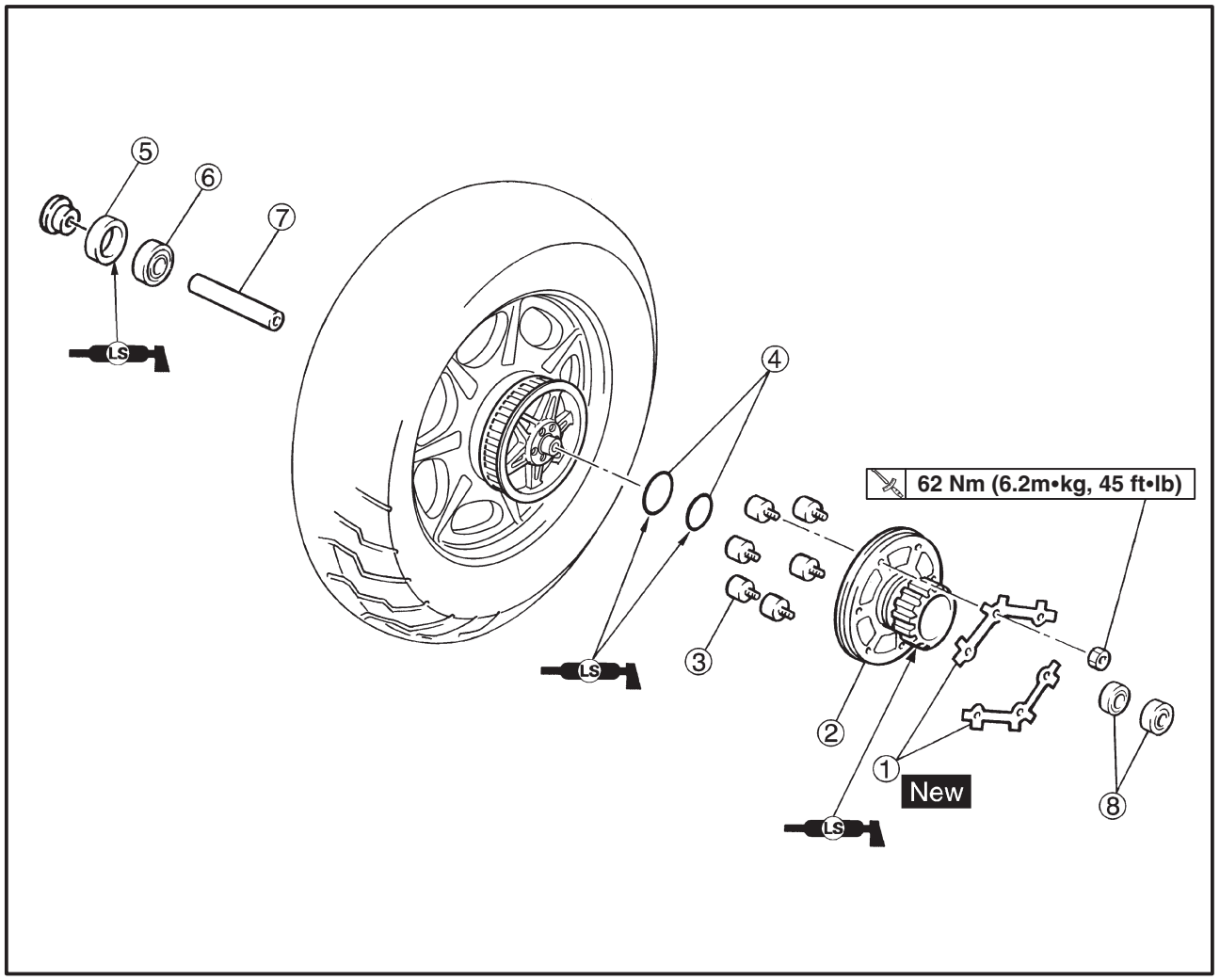


Order	Job name/Part name	Q'ty	Remarks
	Removing the muffler and brake caliper		Remove the parts in the order listed.
1	Muffler	1	
2	Muffler stay	1	
3	Brake hose holder	1	
4	Brake caliper	1	Refer to "REMOVING THE REAR WHEEL". For installation, reverse the removal procedure.

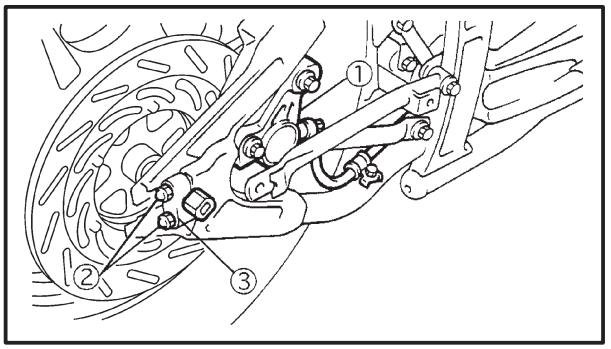
REAR WHEEL



Order	Job name/Part name	Q'ty	Remarks
	Removing the rear wheel		Remove the parts in the order listed. **⚠ WARNING** **Securely support the motorcycle so there is no danger of it falling over.**
	Final gear oil		Drain Refer to "FINAL GEAR OIL REPLACEMENT" in CHAPTER 3.
	Fuel tank and seats		Refer to "FUEL TANK AND SEATS" in CHAPTER 3.
	Rear fender assembly		Loosen
1	Brake caliper bracket bolt	1	
2	Bolts	4	
3	Rear axle nut/washer	1/1	Refer to "REMOVING/INSTALLING THE REAR WHEEL".
4	Rear axle end nuts/axle holder	2/1	
5	Rear wheel assembly	1	
6	Washer	1	
7	Collar	1	
			For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Rear wheel disassembly Disassembling the rear wheel		Remove the parts in the order listed.
①	Lock washers	2	
②	Clutch hub	1	
③	Dampers	6	
④	O-rings	2	
⑤	Oil seal	1	
⑥	Bearing	1	
⑦	Spacer	1	
⑧	Bearings	2	
			For assembly, reverse the disassembly procedure.



EAS00562

REMOVING THE REAR WHEEL

1. Stand the motorcycle on a level surface.

⚠ WARNING

Securely support the motorcycle so that there is no danger of it falling over.

NOTE:

Place the motorcycle on a suitable stand so that the rear wheel is elevated.

2. Remove:
   - rear gear case fitting bolts
3. Remove:
   - brake caliper ①
   - brake caliper bracket bolt

NOTE:

Do not depress the brake pedal when removing the brake caliper.

4. Remove:
   - wheel axle nut
   - washer
5. Remove:
   - rear axle end nut ②
6. Remove:
   - rear axle holder ③
7. Remove:
   - rear wheel

EAS00566

CHECKING THE REAR WHEEL

1. Check:
   - wheel axle
   - rear wheel
   - wheel bearings
   - oil seals

   Refer to “FRONT WHEEL AND BRAKE DISCS”.
2. Check:
   - tire

   Damage/wear → Replace.
   Refer to “CHECKING THE TIRES” in chapter 3.
3. Measure:
   - rear wheel radial runout
   - rear wheel lateral runout

   Refer to “FRONT WHEEL AND BRAKE DISCS”.

EAS00567
CHECKING THE REAR WHEEL DRIVE HUB
1. Check:
   - rear wheel drive hub
     Cracks/damage → Replace.
   - rear wheel drive hub dampers
     Damage/wear → Replace.

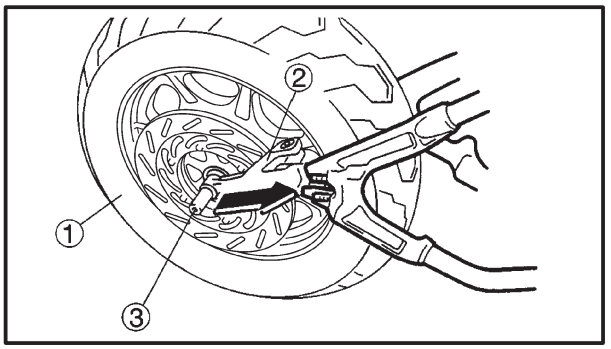
EAS00572
INSTALLING THE REAR WHEEL
1. Lubricate:
   - drive shaft splines

Recommended lubricant
Molybdenum disulfide grease

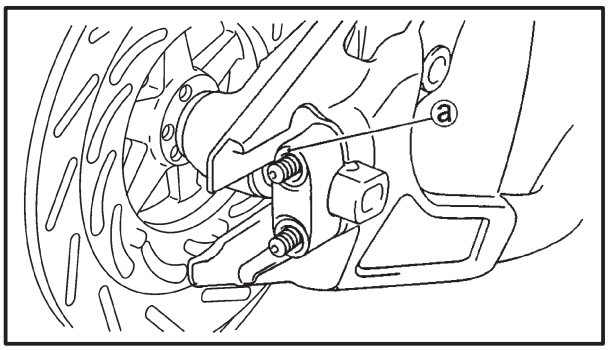
2. Lubricate:
   - wheel axle
   - wheel bearings
   - oil seal lips

Recommended lubricant
Lithium soap base grease

3. Install:
   - rear wheel assembly



a. Install the rear wheel assembly ① with the rear brake caliper bracket ② and hold the bracket to keep the specified position.
b. After installation of the rear axle shaft ③, slide the wheel assembly to forward direction.
c. To make sure the caliper bracket mounts on the swingarm and then, fix the holder of swingarm temporally.



NOTE:
The holder should installed with the punch mark ⓐ facing upper.

d. Tighten the rear gear housing bolts, with specified tightening torque.

Rear gear housing bolt
70 Nm (7.0 m•kg, 51 ft•lb)

e. Tighten the nut of rear axle shaft with specified torque.

Wheel axle nut
107 Nm (10.7 m•kg, 77 ft•lb)

f. Tighten the rear axle holder with specified torque.

Rear axle end nut
23 Nm (2.3 m•kg, 17 ft•lb)

g. Tighten the rear brake caliper bracket bolt with specified tightening torque.

Brake caliper bracket bolt
40 Nm (4.0 m•kg, 29 ft•lb)

h. Install the rear brake caliper on the bracket and tighten the bolts with specified tightening torque.

Brake caliper bolt
40 Nm (4.0 m•kg, 29 ft•lb)

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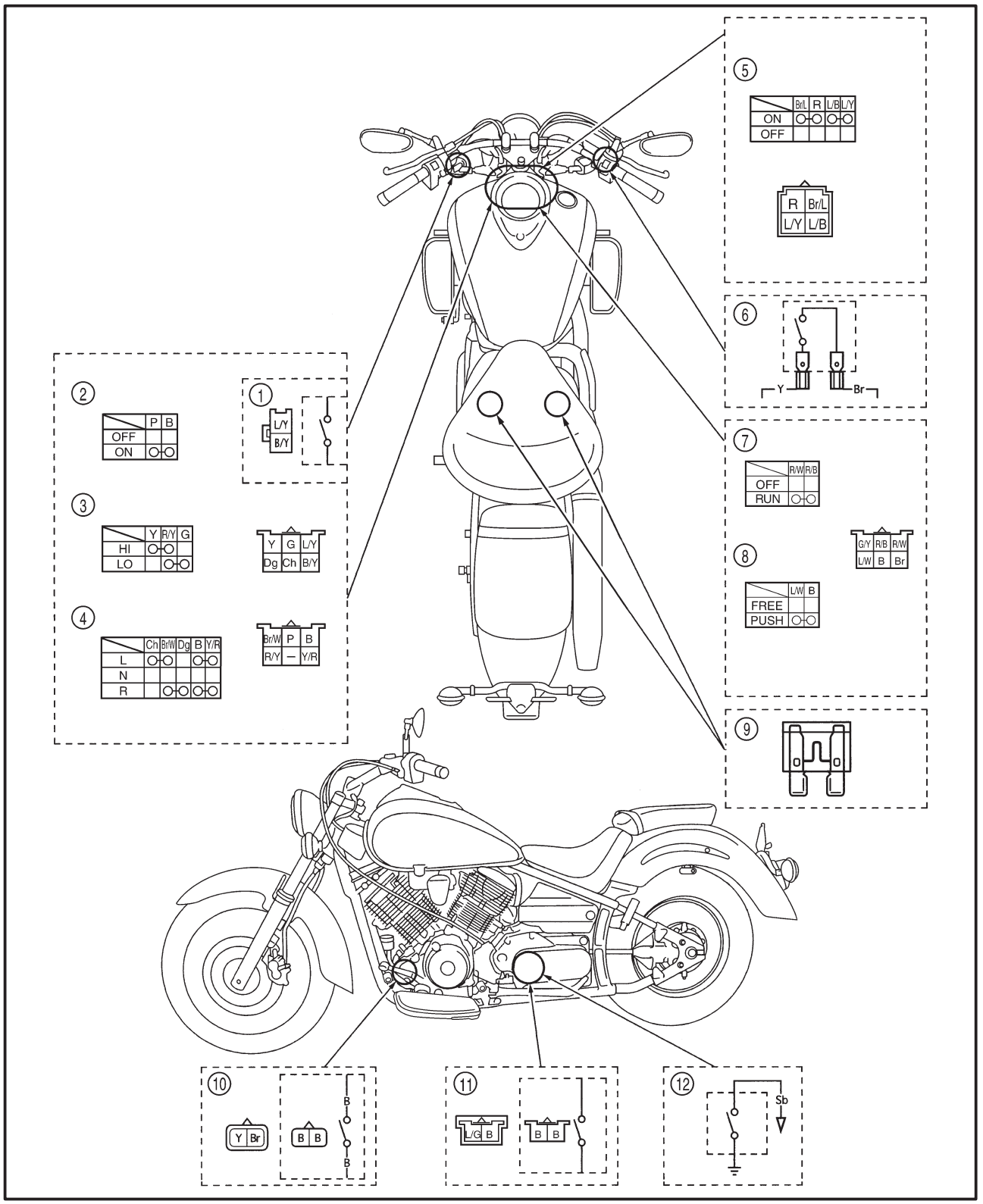
ELECTRICAL

EAS00731
CHECKING THE SWITCHES

Check each switch for damage or wear, proper connections, and also for continuity between the terminals. Refer to “CHECKING SWITCH CONTINUITY”.

Damage/wear → Repair or replace the switch.
Improperly connected → Properly connect.
Incorrect continuity reading → Replace the switch.



① Clutch switch
② Horn switch
③ Dimmer switch
④ Turn signal switch
⑤ Main switch
⑥ Front brake switch
⑦ Engine stop switch
⑧ Start switch
⑨ Fuse
⑩ Rear brake switch
⑪ Sidestand switch
⑫ Neutral switch

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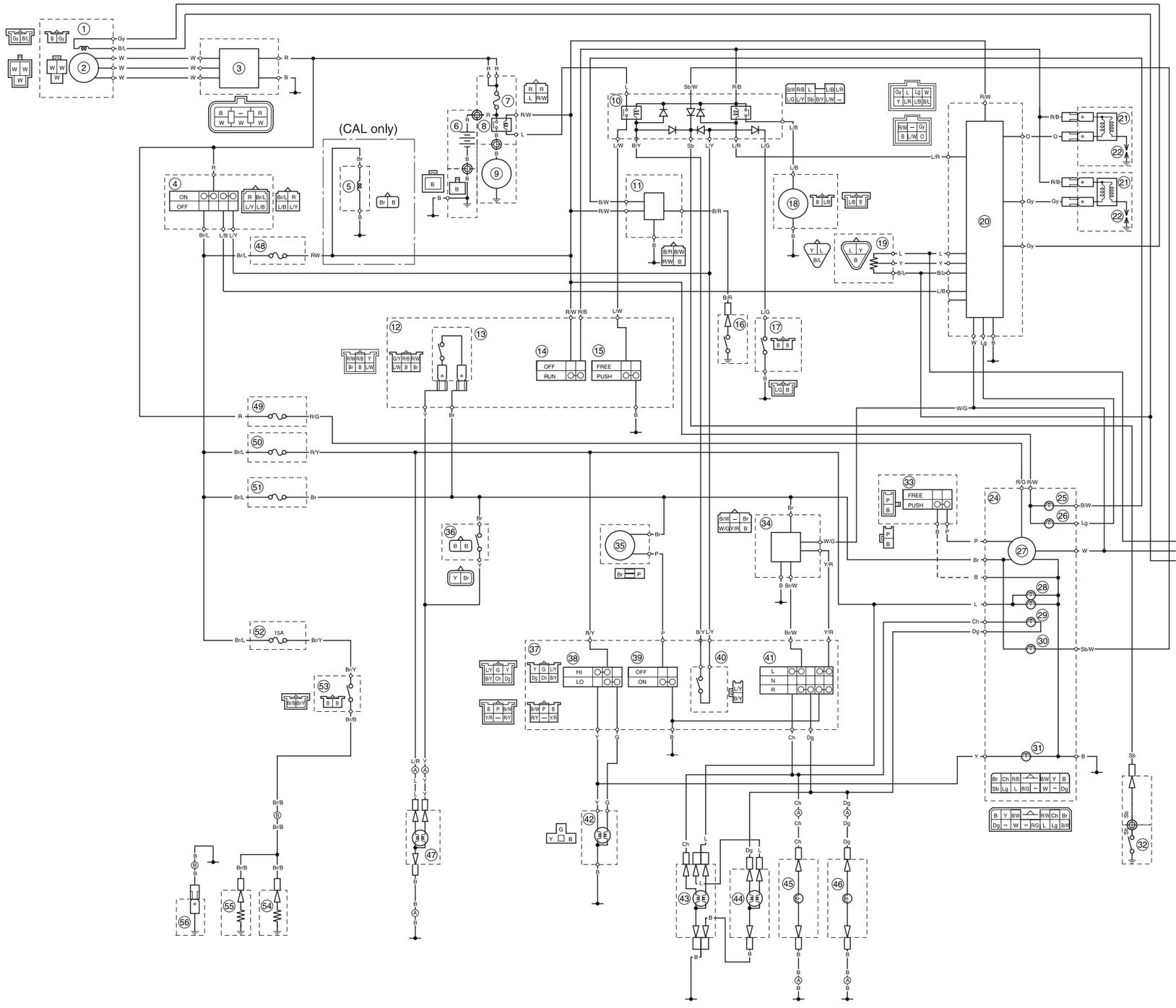
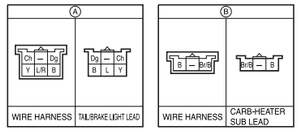
XVS1100AWR(C)/XVS1100ATR(C) WIRING DIAGRAM





1. Pickup coil
2. A.C. magneto
3. Rectifier/regulator
4. Main switch
5. Solenoid
6. Battery
7. Main fuse
8. Starter relay
9. Starter motor
10. Starting circuit cut-off relay
11. Oil level warning light relay
12. Right handlebar switch
13. Front brake light switch
14. Engine stop switch
15. Start switch
16. Oil level gauge
17. Sidestand switch
18. Fuel pump
19. Throttle position sensor
20. Igniter unit
21. Ignition coil
22. Spark plug
23. Speed sensor
24. Meter assembly
25. Oil level warning light
26. Engine trouble warning light
27. Speedometer
28. Meter light
29. Turn signal indicator light
30. Neutral indicator light
31. High beam indicator light
32. Neutral switch
33. Trip switch
34. Turn signal relay
35. Horn
36. Rear brake light switch
37. Left handlebar switch
38. Dimmer switch
39. Horn switch
40. Clutch switch
41. Turn signal switch
42. Headlight
43. Front turn signal light (left)
44. Front turn signal light (right)
45. Rear turn signal light (left)
46. Rear turn signal light (right)
47. Tail/brake light
48. Ignition fuse
49. Backup fuse
50. Headlight fuse
51. Signal fuse
52. Carburetor heater fuse
53. Thermo switch
54. Carburetor heater 1
55. Carburetor heater 2
56. Carburetor heater earth

COLOR CODE

B	Black	Br/B	Brown/Black
Br	Brown	Br/L	Brown/Blue
Ch	Chocolate	Br/W	Brown/White
Dg	Dark green	Br/Y	Brown/Yellow
G	Green	L/B	Blue/Black
Gy	Gray	L/G	Blue/Green
L	Blue	L/R	Blue/Red
Lg	Light green	L/W	Blue/White
O	Orange	L/Y	Blue/Yellow
P	Pink	R/B	Red/Black
R	Red	R/G	Red/Green
Sb	Sky blue	R/W	Red/White
W	White	R/Y	Red/Yellow
Y	Yellow	Sb/W	Sky blue/White
B/L	Black/Blue	W/B	White/Black
B/R	Black/Red	W/G	White/Green
B/W	Black/White	Y/L	Yellow/Blue
B/Y	Black/Yellow	Y/R	Yellow/Red